The Journal of the American Medical Association

VOL. XXXII. CHICAGO, ILLINOIS, MARCH 11, 1899. No. 10.

ORIGINAL ARTICLES.

CONGENITAL DEFORMITIES OF THE HANDS.

Read before the Chicago Academy of Medicine, Jan. 13, 1899.

BY FRANCIS R. SHERWOOD, M.D.

PROFESSOR OF ANATOMY IN THE COLLEGE OF PHYSICIANS AND SURGEONS; PROFESSOR OF SURGERY IN THE CHICAGO CLINICAL SCHOOL.

CHICAGO.

Anomalies of the hand are not an infrequent occurrence. The variety of the deviations from the normal are very great, from that of a double hand, as reported by Geraldes and others, or one with supernumerary digits, or cleft hand, as operated on and reported by C. N. Dowd,[1] or with suppression of digits, and so on down to congenital absence of hand. Perhaps the most frequent congenital deformity of the hand is that of supernumerary digits. The writer attended school with a family in which there were supernumerary digits of the hands and feet in both males and females in two generations. Some of the children were normal. The father of one of the families had a cleft palate without any deformity of the hands. These cases have never been recorded. Those who possess the deformities, as well as the parents, are always more or less sensitive about exposing them; consequently, no doubt, the greater number of them never reach the medical literature. Most of the supernumerary digits are removed during childhood, and many of the most unsightly defects of the hands are corrected at an early period. Many cases of congenital deformities are never known, even by the family physician, unless discovered by accident or a special examination of the part becomes necessary as a result of a diseased condition. The writer was the physician of a family for four years, and on the delivery of the first child discovered a defect of the foot. It was then learned that the same defect was present in the mother, aunt, uncle and grandfather.

A review of our present understanding of the etiology of congenital malformations.—One of the most interesting questions in connection with congenital malformations is that of their causation. In early times witchcraft, demonology and copulation with the devil or lower animals was held responsible for the causation of monstrosities and malformations. Human deformities were supposed to show the displeasure of the gods, and when occurring in animals, they were thought to portend dire calamities. Bichat was the first who recognized the true causes of malformations and placed them on a scientific foundation, when he associated them with embryogenesis. Many physicians, from whom more rational views ought to be expected, and the majority of the laity still look upon maternal impressions as the principal cause of malformations. This view is not only wrong, but it is an injury to the comfort and well-being of many mothers, who live in constant dread and fear during the period of gestation, lest they behold some hideous object which will leave its imprint on their offspring. There is not a single argument which has for its foundation a scientific basis in favor of the fact that maternal impressions or mental emotions cause birthmarks or malformations of any kind. Anomalies occur among the lower animals and in the vegetable kingdom, which have their counterpart in human deformities.

The examples of arrest in development of the organism in the lower forms of animal life are numerous. The examples of increased development are also frequent. Neither are recognized as being controlled by mental impressions. They are all recognized as having one etiology—influences governing nutrition. The more complex the organization, the greater is the tendency to deviation from the usual type. Yet, with all the complexity of the human organism, teratologists find that while some deviations occur in them more frequently than others, some malformations only occur once in many thousands of individuals.

The human hand is a wonderfully complex piece of mechanism. It is one of the most frequent seats of abnormalities. Those organs which are most closely connected with the compatibility of life, as the heart, brain and lungs, do not seem to be as frequently subject to malformations in their essential parts as other organs, which may be explained by the fact that their imperfections naturally result in early death of the organism. As far as science at present is able to understand them, the anatomic formations and physiologic relations of the mother and fetus, from the time of fecundation of the ovum with the spermatozoon and its fixation in the genital tract, are for the purposes of nutrition and its protection from external influences during the period of gestation. There are two factors which are largely responsible for structure. The first is heredity, which acts principally during intrauterine life; the second is environment, which constantly influences its future development. Anything which interferes with the normal development of the anatomic structures of a part of the fetus may produce a malformation of that part, as, for example, an imperfect arterial or nervous development. Many congenital malformations are supposed to be due to mechanic causes. There is good evidence that some cases of microbic infection in the parent may result in malformations or degeneracy in the offspring.

We have come to recognize the laws which govern the growth in one class of animals as applicable to the growth of all classes of animals. We are learning that the same laws which govern the pathology in one class of animals are also applicable to all classes of animals. Why not, therefore, recognize

[1] Annals of Surgery, 1896.

the laws which govern the malformations in one class of animals as applicable to all classes of animals? If we accept maternal impressions and mental emotions as the cause of malformations in the human species, what accounts for them in the lower forms of life?

To my mind, the most incontrovertible argument in favor of the embryogenesis of malformations is found in the following facts mentioned by Fisher: "It has been observed by eminent embryologists that the transient forms of human embryo, in the several stages of its evolution bear a striking resemblance to the persistent types of the lower order of animals; hence the human malformations which result from arrest of development often acquire the appearance of brutes, while those occurring in animals for the most part, have the forms of beings still lower in the scale, but the deviations from the normal type of a species are never so great as to destroy all semblance to it. There is a limit beyond which abnormalities never pass. In no case has a monstrosity been known in which there has been developed a part or organ not belonging to the species of animal which was the subject of the malformation; such as partly human and partly animal, beast and bird, bird and reptile." Hence, while we find deviations in all classes there is a limit to the abnormalities of each class.

Human embryology is practically in its infancy. Even now, however, great light has been thrown on many hitherto inexplicable conditions in the human body, perhaps the most strikingly so in the arrangement of the nervous system and peritoneum.

In 1893, while the demonstrator of anatomy, it was my good fortune to examine in the dissecting room an abdomen in which the fetal type of the alimentary canal was present to a very marked degree. There was no mesentery to the small intestines except the peritoneum which surrounded the trunk of the superior mesenteric artery. The ileum and cecum hung free in the abdominal cavity, covered by the peritoneum, but otherwise unattached to the abdominal wall. It was capable of being carried to any portion of the abdominal cavity. The small intestines were less than half their usual length. The descending colon and sigmoid flexure had its original mesenteric attachment to the median line of the posterior wall of the abdomen down to the rectum. The stomach retained its semi-vertical position in the abdomen. The well-known variations in the formation of the brachial plexus are not only attested by the great variety of descriptions given by different authors, but are constantly being met with in our dissection of the human subject. While they can not be classed as malformations, and while their variations do not in any way interfere with the functionation of the members supplied, they are subject to the same laws of embryologic change in formation as are those of malformations.

To fully understand the causes of deformities of the hand, it will be well to examine the causes of the more striking malformations of the body. The experimental studies of Allen Thompson, Wolff, Von Baer and Reichert on the development of monsters in the chick embryo, have demonstrated that many occur from the fecundation and abnormal development of a single Graafian follicle, and not, as many have supposed, from the fecundation and fusion of a double Graafian follicle. They found that these monsters could be produced by mechanic irritation, at least in a portion of the embryos. Charrin and Gley[2] experimented on rabbits, demonstrating that the reception of virus by the parent, bacillus or ptomains of blue pus, may result in some of the members being poorly developed, or in rudimentary organs, in degeneracy, abortion, early death, etc. The results of these experiments were not uniform. This corresponds perfectly with our knowledge concerning the influence of the virus of syphilis.

Dr. George Jackson Fisher[3] very plainly illustrates the formation of some monstrosities by cuts as follows: His Fig. 1 represents an embryo with a cleft in the cephalic extremity of the primitive trace, which accounts for the development from a single embryo of two heads on one body. Fig. 2 represents a cleft in the caudal extremity of the primitive trace, which accounts for the development of two bodies from a single embryo with one head. Fig. 3 represents two separate and distinct primitive traces on the same embryo from which a double monster may be developed, as in the case of the Siamese twins. It was observed by the above experimenters on the chick embryo that the closer the primitive traces were located to each other, the more intimate was the blending of their bodies. The deeper the dichotomy or the division of the cephalic or caudal extremities of the primitive traces, the more marked was the individual development of the heads or the lower portion of the bodies; the less marked the dichotomy, the greater was the fusion of the parts in the future process of the development.

It has been found from the dissections of monsters that the corresponding parts of the body unite with each other with the same regularity with which we

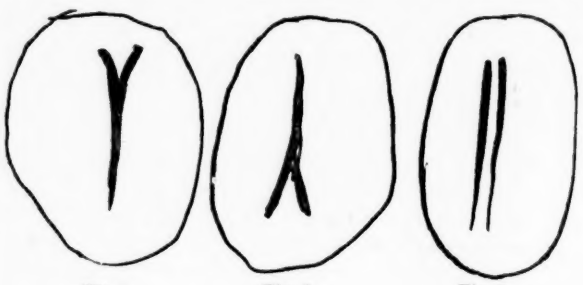


Fig. 1. Fig. 2. Fig. 3.

find the two halves of a body uniting. Corresponding muscles, organs or bones, as well as relative portions of the head, chest or abdomen, were found united with each other. This shows that these parts are developed in unison just the same as the two halves of a body.

"A strong tendency exists in the animal and vegetable kingdom for parts ending in free extremities to bifurcate or dichotomize." (J. Bland Sutton.) The extremities grow from the axial part of the trunk, and if any one of them is affected by dichotomy, a double limb is developed just as in dichotomy of a portion of the body. If dichotomy only affects a portion of the distal extremity of the limb, and it extends as far back as the the carpal bones, a double hand is developed. Should it only affect one of the fingers, we get a development of a supernumerary finger. Instances of congenital deformities are not wanting where it is plain that there has been a suppression of development of some of the parts, even after normal development had progressed for some time; so that we get imperfectly formed parts, or we may have a complete

[2] Kiernan, Transformation of Heredity, Lancet.
[3] Reference Handbook of the Medical Sciences.

suppression of development of a portion of the body from the beginning, so as to cause an entire absence of parts. "Dichotomy occurs in the limbs of many vertebrata, from the lowest to the highest, and is the chief cause of supernumerary fingers and toes."[4] In place of involving the fingers it may involve the entire hand, producing a rare deformity called cleft hand. C. N. Dowd[5] considers the causes of these deformities conjectural, but thinks them probably due to mechanic effects on the hands, of amniotic adhesions. While this might be a plausible explanation of the cleft, it does not explain the fusion of the fourth and fifth metacarpal bones which exists in Dowd's case, as shown by the X-ray. No doubt the cleft is a developmental aberration as free from mechanic causes as is the fusion of the metacarpal bones.

Heredity.—Many congenital malformations are transmitted by heredity; many cases have no immediate hereditary taint. In the cases reported below the possessor of the deformity has two perfect children, and there is no trace of malformation in any of the relatives for one hundred years back, which is as far as can be traced. In Gould's "Anomalies" there is related an instance of a very numerous tribe of twenty-four-fingered people in Arabia. Marriage was confined to the tribe. So strong was their belief in hereditary transmission that an infant born with a normal number of digits was sacrificed as being the offspring of adultery. These deformities may again disappear by intermarriage with normal individuals. When a deformity is once produced by some aberration in development or pathologic influence on the embryo, it has a tendency to follow the law of nature that like produced like under the same influences.

Suppression of digits. Gould has collected a few of the cases reported: Maygrier's case of a woman with one finger on each hand, and two toes on each foot. Her two children had exactly the same deformity. Her mother was perfect, but her father had only one toe. Kohler's case of suppression and deformity. Two professional dime museum cases, one with two, and the other with one digit on each hand. This list, of course, is not complete. The occurrence of suppression is much more rare than that of supernumerary digits.

Report and presentation of a case of congenital deformity of the hands.—Fig. 4 is a reproduction of a photograph of the palmar and dorsal aspect of the right and left hands respectively, showing the appearance of the deformity.

Case.—Male, aged 36 years; resident of Chicago; weight about 130 pounds; height about 5 feet 5 inches. The hands are very useful and enable the man to do any kind of light work. There is a retardation of development of the lower half of the forearms. The styloid processes of the ulnæ are not well developed. (Figs. 5 and 6.)

There are many interesting anomalies of development in this case, but I desire to consider at this time only the deformities of the hands and in a general way the upper extremities. The muscular development of the arms is more than that of an ordinary individual. The deltoid is well developed and stands out very prominently. The humeri are of the same length—twelve inches. The left forearm is one and one-half inches shorter than the right, with incomplete extension at the elbow. The thumb and forefinger on the left hand are webbed almost to their tips, but they make quite a useful member. (Figs. 4 and 6.) The nails are separated from each other.

I reported this case in the *Chicago Clinic*, September, 1898, as a case of suppression of two digits, and development of a supernumerary thumb on each hand. I had to admit that two separate and distinct processes had taken place in the same deformity—suppression and supernumerary formation. The latter is at least of very rare occurrence, while suppression and retardation of development are of comparatively frequent occurrence. After a more careful study of this case, I am convinced that it is one of suppression and retardation of development. I gave reasons for this belief in my first report. I now regard it as being a case of suppression of the little finger on each hand, with suppression of the middle phalanx of each index finger, which resembles in appearance and performs the functions of the thumbs. There is a retardation and deformity in the development of the thumb on each hand. The arguments in favor of this view are principally anatomic.

A comparative study of the relations of the meta-

FIGURE 4.

carpal and carpal bones of the deformed hands with those of the normal hand shows, by referring to X-ray Fig. 7, of the normal hand, that besides the metacarpal bones articulating with each other, we have the first metacarpal bone articulating with the trapezium. The second metacarpal articulates with three carpal bones, the trapezium, trapezoid and os magnum. The third metacarpal articulates with the os magnum alone. The fourth metacarpal articulates with the os magnum and unciform. The fifth metacarpal articulates with the unciform alone; that is, the metacarpal of the thumb articulates with one carpal, the metacarpal of the forefinger articulates with three carpals, of the middle finger with one carpal, of the ring finger with two carpals, while the metacarpal of the little finger articulates with only one carpal. The order of articulation from the thumb side is 1, 3, 1, 2, 1.

[4] J. Bland Sutton; Evolution and Disease.
[5] Annals of Surgery, August, 1896.

By referring to X-ray of the deformed right hand (Fig. 5), it can be seen that the metacarpal of the thumb articulates with the trapezium and trapezoid, and its contiguous metacarpal, and pushes under the proximal extremity of the third metacarpal in a vain attempt to get to the os magnum, as does the second metacarpal in the normal hand; the third metacarpal articulates with the os magnum as it does in the normal hand, but in Fig. 6, as a result of the irregular mass of bone which represents the fusion of the first and second metacarpals, having a small articular junction with the fused trapezium and trapezoid, the middle metacarpal articulates with two carpals instead of one, as in the normal hand. In Fig. 5, the fourth metacarpal articulates with two carpals, the os magnum and unciform, as it does in the normal hand, while the fifth metacarpal has been entirely suppressed.

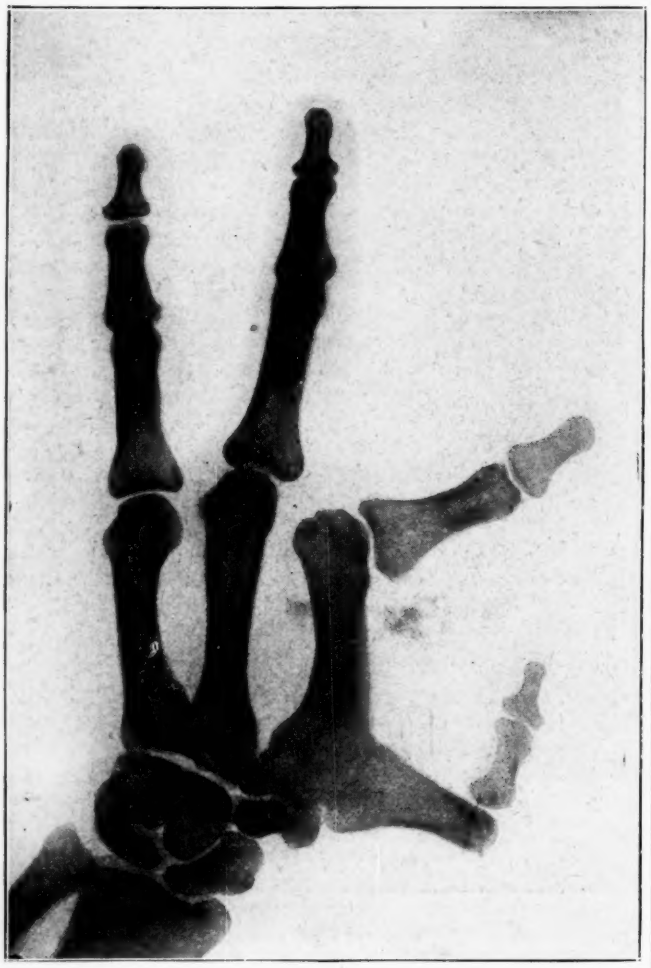


FIGURE 5.

FIGURE 6.

The metacarpal of the middle finger of the left hand (X-ray, Fig. 6) articulates with the trapezoid and fused os magnum and unciform, while in the normal hand it articulates with the os magnum alone. The fifth finger and metacarpal are, as before stated, absent. Thus it is seen that the points of similarity between the left deformed hand and the normal are not so marked as in the right. The differences are really due to the greater deformity of the bones in the left hand. (See Figs. 5 and 6.) Imagine the development of the first and second metacarpal and the distal row of carpal bones of the left hand equal to that of the right hand, and it can readily be seen that the points of similarity to the normal hand would be as numerous as they now are in the right hand. The metacarpal of the middle finger of the left hand (X-ray, Fig. 5) is normal in size, while the os magnum is much smaller than normal, and is fused with the unciform.

In studying the carpal bones we find seven represented by the X-ray in the right, and four in the left wrist. Four carpal bones are represented in the distal row in the right wrist, and three in the proximal. All are irregular and poorly developed. In the left wrist two separate carpal bones are represented in the distal row, and two in the proximal. They present the appearance (Fig. 6) of a fused trapezium and trapezoid and fused os magnum and unciform. In the proximal row the scaphoid appears single, while the semilunar cuneiform and pisiform appear to have been fused.

In studying the comparative lengths of the metacarpal bones and phalanges of the deformed hands with those of the normal hand, the following points are worthy of note: A very prominent feature of the hands is that the third digit on each hand (Figs. 4, 5 and 6) is the longest, which corresponds in length with the third digit on the normal hand. The second metacarpal bone (X-ray, Fig. 5) is much longer than the metacarpal of the thumb should be. It has a parallel relation to the third and fourth metacarpal bones, and it articulates with the trapezium and trapezoid, as does the metacarpal of the index finger of

the normal hand. The proximal and distal phalanges in this digit resemble in length and width those of the thumb. They stand almost at right angles to the other digits, due to a dislocation of long standing. In the recent state the proximal phalanx stood parallel to, and in the relative position of, the proximal phalanx of the index finger of the normal hand. Although in size it does resemble the proximal phalanx of the thumb, this might be accounted for by hypertrophy due to use, as it has always been used for a thumb. On the normal hand the distal joint of the thumb is on a line with the metacarpo-phalangeal articulations of the fingers.

There are two reasons for this being so in the normal hand. First, the metacarpal bone of the thumb is the shortest metacarpal of the hand, and its articulation with the carpals is on a proximal plane to the other metacarpo-carpal articulations. Therefore, the

FIGURE 7.

metacarpo-phalangeal articulation of the thumb on the normal hand comes about the middle of the shaft of the metacarpal bone of the index finger, while the distal joint of the thumb is on a line with the metacarpo-phalangeal articulations of the fingers.

The distal joint of the second digit of the right hand (Fig. 5) almost reaches the middle articulation of the fingers, as is normal for this joint. One great difficulty in classing this member as a forefinger is the fact that the middle phalanx is absent, but it is a well-known fact that complete suppression of a phalanx or section of the arm does occur by referring to X-ray, Fig 8 (a case operated upon by Dr. Oswell, and reported in *Chicago Clinic*, 1898). It will be seen that the second phalanx of the index finger is a small irregular mass of bone. One step more in its retardation and it would be absent. There is nothing unusual in the distal phalanx of this digit, unless it be its width.

In considering the right thumb, which appears to be the supernumerary thumb, the following points are of interest: Its metacarpal bone articulates with the trapezium. Ossification has taken place between the first and second metacarpal bones, the first stands at about right angles to the second, while the phalanges stand at right angles to their metacarpals and parallel with the metacarpal bone of the index finger, a result which has been brought about no doubt by contraction of its web. The first metacarpal here of the right thumb is shorter than the second metacarpal, its articulation with the carpal bone is on a plane

FIGURE 8.

posterior to the other metacarpo-carpal articulations, which is the condition in the normal hand. If this thumb was straightened around in its normal position, the distal phalangeal articulation would just about reach the level of the metacarpo-phalangeal articulations.

In considering the left hand, the bone deformity is greater, and points of similarity to the normal hand not so numerous. (X-ray, Fig. 6.) The articular facets on the irregular mass of bone which represents the first and second metacarpals are five in number, two for the phalanges, two for the carpal, and one for the metacarpal. The facet on the radial side of the bone for articulation with the trapezium is located distal to the other metacarpo-carpal articulations, which is contrary to the condition in the normal

hand, but the facet which articulates with the trapezoid side of the fused carpals is on a line with the other articulations. The distal articular facets on this mass of bone have the normal relation to each other, the outer or radial one being more proximal than the one for the index finger. The phalanges of the true thumb here are connected by a web with the phalanges of the index finger, one phalanx of which is entirely suppressed and assists in forming a very useful thumb.

To carry out the comparison: if the web were cut between the first and second row of phalanges, on straightening the second digit the distal joint would extend beyond the point which the distal joint of the normal thumb reaches, while the distal joint of the first digit would not quite reach the normal position. In the normal hand the third metacarpal bone is the longest. (Fig. 7.) In Figs. 5 and 6 it will be noted that the third metacarpal on the right hand is the longest, as is its corresponding metacarpal on the left. On the palmar aspect at the distal joint of the right thumb the folds are multiple, as can be seen by referring to Fig. 4. This is the normal condition of the first interphalangeal joints of all the fingers, while at the distal joints of the fingers, as well as at both joints of the thumb, the folds are single.

DISCUSSION.

Dr. L. LOEB—In the last eight or nine years there has been quite an extensive literature regarding the production of malformations in different classes of animals. A number of experiments have been conducted, and the main result of them is that each part of the egg is much more liable to form other organs and parts of the body than those under normal conditions, as was heretofore believed. Thus the formerly widely accepted view of His, that in the egg each part of the body must have its corresponding preformed place in the egg, holds good no longer. Experiments have shown that by separating part of the egg in different stages of development parts of the body can be formed that would not have formed under normal conditions. A part of the protoplasm of one egg or one blastomere can form whole embryos. Oscar Schultze succeeded in producing in eggs of frogs a typic dicephalus by using the influence of gravitation. The last experiment of this kind was reported by Barfurth at the last meeting of the Anatomic Society. He succeeded in duplicating the tail of the embryo of the frog by cutting it off and using a hot needle at the point of insertion. But we must distinguish these cases of duplication from those where one part of the body is wanting, or where both kinds of malformation are combined, as in Dr. Sherwood's case.

Thus far these investigations throw less light upon these malformations, although in ctenophores by taking away a part of the protoplasm or a blastomere the later stages of development of the embryo show a defect in the number of the so-called ribs. A diminution of the parts of the body might also be brought about by the coalescence of neighboring parts. In this regard I might mention the interesting results of Zur Krassen, who showed that in ascaris even two or more eggs may coalesce and one embryo may result. Another important point brought out by these researches is that external influences, such as light, gravitation, etc., can be determining causes in cases of changes in the arrangement of the body. This has been especially proven in the regeneration of lower animals.

Dr. EUGENE TALBOT—While Dr. Sherwood has described this case most interestingly from an anatomic standpoint, it is to be regretted that the etiologic factors have received so little attention. In dealing with these cases these last are of more interest from every standpoint. In the present case, which is an illustration of the law pointed out by Aristotle, of economy of growth, whereby certain structures profit in the struggle for existence in the body at the expense of other structures, the maternal condition would be of a special interest. While the maternal impressions have been much overestimated as to their influence on the offspring, still there is no doubt that continued nervous shocks to the mother, or even single nervous shocks, may check at certain periods the development of the embryo. This is particularly the case before the ninth week. The human hand and arm develop, as Rosenberg has pointed out, practically from a flipper condition resembling the seal, or more properly, the conditions found in animals like the ichthyosaurus. If at this period a sufficient moral shock occur, checked development in certain particulars, with its natural result, under the law of economy of growth—excessive development in other particulars—will result. Not only may moral shocks produce these conditions, but toxins and bacteria may have the same results. Charrin and Gley for five years conducted experiments exemplifying these results. In rare instances the offspring survived; more rarely still are they healthy. Certain rabbits (born of these undeveloped animals) were provided with enormous epiphyses, the diaphyses being shortened. Two rabbits were born of a couple of which the male alone received inoculations of sterilized culture. Five rabbits were born of these, two of which were normal and a third, whose ears were rudimentary, died in a few days. In the remaining two the ears comprised only fragments with jagged edges. The tails were but two centimeters long. The external orifice of the vagina (one rabbit was a male and the other a female) was oblique. One of the limbs (the hind in the male and the fore in the female) was much shorter than its fellows, the difference being four centimeters. The shortened limb ended in a kind of stump, there being no foot or toes.

Besides the hand malformations there are other interesting features in this case. From a dental standpoint it is in my experience unique. The man has three central incisors. Three or four lateral incisors are frequently found, but not three central incisors. He has arrest of development of the face. That is probably a progression. The face is growing smaller in the human race, and whenever we have this marked neurotic condition of the child, there is early arrest of development, which this patient shows now. These conditions are frequently due to a want of nutrition; the mother in carrying her child is not fed properly; she worries a great deal oftentimes, and that accounts to a great extent for so many cases of arrest of development and of tissue which is noticed.

Take a family of twelve children, as I happen to have in mind now, living in New England, leading a quiet life upon a farm, the surroundings of which are the same today as they were thirty or more years ago. Eleven of these children were normally formed; the twelfth child is markedly deformed. In this case I knew the mother was completely tired out; her nervous system was unstable; and as a result of it there was marked arrest of development in the fetus. These conditions, in this case, were produced before the sixth week of fetal life. Since there is an extra tooth in the mouth of this patient before us it shows a neurotic condition of the mother at that time. The germ commences to form at the sixth week. There was an extra one laid down. There is no question but that the other deformities date back as early as that time because the hands are not perfectly formed.

Dr. FERGUSON—Have you made any experiments, Dr. Sherwood, with regard to the innervation of the digits?

Dr. Sherwood, closing the discussion—The hour is getting late, and I shall not take up a great deal of your time. With reference to the remarks made by Dr. Talbot, I agree with scarcely anything he has said, and it would consume too much time for me to give my reasons. His remarks remind me of what my old aunt once said, when talking about evolution and Darwinism. She said: "You can talk about Darwinism all you like, but you can't make me believe that I came from a hog." While Darwin was a great man and has said a great many good and true things, I am not fully in accord with his beliefs. I am not ready to accept all the doctrines of evolution. Personally I do not believe that maternal impressions ever cause deformities except as a result of nutritional disturbances, thereby arresting development of the whole or certain parts of the fetus. In the same way imperfect function of organs may result. In regard to the innervation of the digits in this case, I did not refer to it except in speaking of the causation of deformities. I mention the fact that there was imperfect nervous and vascular development in a great many cases. This may be an important factor in the cause of the deformity.

THE HISTOPATHOLOGY OF HYPERTROPHIC RHINITIS IN CHILDREN.

Presented to the Section on Larnygology and Otology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. L. GOODALE, A.M., M.D.
BOSTON, MASS.

The chronic inflammations of the intranasal structures in children possess especial interest from the fact that a knowledge of their nature may be expected to furnish the key to several obscure pathologic conditions of later life. Nevertheless, our information regarding the early stages of these affections is extremely meager, and a fruitful field is still here open for investigation.

Without discussing the relation to each other of the various forms of inflammation within the nose. I present the histologic descriptions of three cases of hypertrophic rhinitis in children. As will be seen, they exhibit an essential similarity to each other in both clinical and pathologic characteristics.

Case 1. The patient, a girl 10 years of age, was brought to the clinic for nasal obstruction of one year's duration. Examination showed a pale, poorly nourished child. The tonsils were slightly larger than normal and there was a small amount of non-obstructive adenoid tissue in the nasopharynx. Glandular enlargement was absent and there was no evidence of rachitis. The lower turbinates on both sides were enlarged and in contact with the septum. The enlargement was shown by the probe to be seated in the tissue covering the bone, the latter being unchanged in size. The consistence was about that which would be found in a normal turbinate. The surface anteriorly was smooth and rounded; posteriorly it was mammillated, particularly on the right. The color of the mucous membrane was much paler than normal. Under cocain a slight shrinking in size was noted. The middle turbinates could be seen with difficulty, but exhibited, so far as could be determined, a similar pale enlargement. There was a moderate amount of thin mucus in the nasal passages.

Histology.—A portion of the lower turbinate on the right was removed with the snare and hardened in Zenker's fluid. Under the microscope, sections show a furrowing of the mucous membrane, which varies in thickness from three or four cell layers on its exposed surface to fifteen or twenty cell layers along the side and bottom of the furrows. The cells are columnar in type and show nothing abnormal in their cytoplasm or nucleus. The epithelium lining the furrows is ciliated, while that on the exposed free surface shows no cilia. In the intercellular spaces are a few scattered polymorphonuclear neutrophiles.

Below the mucous membrane is a loose connective tissue extending to the periosteum. The transverse diameter of this connective tissue is from three to four times greater than normal. It appears as an irregular wide-meshed, exceedingly delicate fibrous network, in which are contained scattering clusters of glands, a few thin-walled, more or less tortuous, blood-vessels, here and there a large sinus, together with numbers of free lying cells. The relative proportion of these constituents, varies, as it does normally, in different parts of the sections, the free lying cells being most numerous near the mucous membrane, while the glands are more deeply situated. Furthermore, at the extreme anterior end of the turbinate the reticulum is loosest and the blood-vessels, sinuses, round cells and glands are fewest in number, while a short distance posteriorly the fibrous reticulum is more compact, and these structures are proportionately more numerous.

The free lying cells are most numerous just below the mucous membrane, but are nowhere abundant or gathered to form groups. Those nearest the endothelium of the blood-vessels have the character of the small mononuclear leucocytes of the blood. In the immediate neighborhood plasma cells are found in small numbers, together with cells intermediate in form and staining properties between small mononuclear leucocytes and plasma cells. These two types of cells with the intermediate forms are also found in fair numbers in the immediate neighborhood of the glands and are as well sparingly scattered throughout the whole of the connective tissue. Small numbers of polymorphonuclear neutrophiles occur irregularly distributed, together with a few eosinophilic polynuclear leucocytes. A relatively large number of *mastzellen* are found, most numerous near the mucous membrane. These *mastzellen* are comparatively small, with a few small granules.

The sinuses are sparingly found, chiefly in the central portions of the connective tissue. They are elongated, oval in shape, are lined with endothelium, and contain a varying amount of amorphous granular material, together with, in some cases, red and white blood-corpuscles.

The blood-vessels are few in number, traverse the connective tissue in all directions, and possess a wall of one or two layers of endothelial cells.

The glands are of the ordinary racemose type found in this region and present no noteworthy alteration.

Case 2.—A boy, 10 years of age, pale, poorly nourished, somewhat rachitic. The adenoid and faucial tonsils are slightly enlarged; cervical glands normal. According to the parents' statement, nasal respiration had for some years been frequently interrupted. For the past six months the nose had been completely stopped. Examination showed both lower turbinates greatly enlarged, the left completely filling the nasal passage, the right nearly in contact with the septum. The appearance of the enlargement was similar to that in the preceding case, being pale, smooth, of normal consistence, and shrinking but slightly under cocain. The middle turbinates were seen with difficulty; both were moderately enlarged, and pink, the color contrasting markedly with that of the pale lower turbinates.

Histologic examination.—The mucous membrane is smooth and even, without furrows, and is composed of three to five layers of columnar cells, in which mitotic figures are numerous. The cilia are, in most places intact. A considerable number of polymorphonuclear leucocytes are seen in the intercellular spaces of the mucous membrane. Below the mucous membrane is a loose connective tissue reticulum similar to that in the preceding case. The structure is in general somewhat more compact, the glands are about as numerous, the blood-vessels are much more abundant, as are also the sinuses, while the round cells are conspicuously fewer and are scarcely, if at all, aggregated into groups.

The round cells are chiefly small mononuclear leucocytes, which are found most numerous in the immediate neighborhood of the blood-vessels, many lying in contact with the endothelium of the capillaries. Next in order of frequency are plasma cells scattered irregularly through the connective tissues. Cells intermediate between the small mononuclear leucocytes and the typic plasma cell are found in numbers. *Mastzellen* are conspicuous everywhere and are relatively more numerous than in the preceding case. The sinuses and glands present nothing especially worthy of note. The round-celled infiltration in the neighborhood of the latter is less than in the preceding case. The infiltrating cells are small mononuclear leucocytes, plasma cells, and cells intermediate between them in about equal proportion. Eosinophiles are not found.

Case 3.—A boy, 8 years of age, moderately pale, fairly well nourished, apparently not rachitic. There is moderate enlargement of pharyngeal and faucial tonsils; cervical glands normal; nasal respiration nearly absent on right side, much diminished on left; duration of condition not possible to ascertain with accuracy. Examination showed the right lower turbinate much enlarged and in contact with the septum, pale, smooth, of about normal consistence, shrinking moderately under cocain. The left lower turbinate was also enlarged and pale, though to a less marked degree. The middle turbinates were moderately enlarged, slightly paler than normal. As in the preceding cases, they were decidedly pink by contrast with pale lower turbinates.

Histologic examination.—The mucous membrane covering the lower turbinate presents in general an even outline, dipping down in but one or two places to form a shallow furrow. It is of the columnar type, varying in thickness from three to six cell-layers. Here and there a few cilia are seen in regions where the mucous membrane is thickest, but in most places cilia are absent. Numbers of mitotic figures are observable in the epithelial cells. Many polynuclear neutrophilic leucocytes lie in the intercellular spaces of the epithelium.

Below the epithelium and extending to the periosteum is a loose connective tissue, appearing as an irregular wide-meshed, exceedingly delicate fibrous network, in which are contained scattering clusters of glands, a few thin-walled or less tortuous blood-vessels, here and there a large sinus and many free round cells, largely aggregated into loose groups. The relative proportion of these constituents varies in different parts of the section. In the region corresponding to the extreme anterior end of the lower turbinate the reticulum is loosest and the blood-vessels, sinuses, round cells and glands are fewest, while posteriorly the reticulum is more compact, and the blood-vessels, sinuses, round cells and glands are more abundant. The round cells are chiefly found immediately below the mucous membrane,

aggregated largely into loose groups around the blood-vessels. The cells nearest the endothelium of the blood-vessels have the character of the small mononuclear leucocytes of the blood. In the neighborhood are great numbers of plasma cells, and cells intermediate in form between the leucocytes and plasma cells. There are also found irregularly scattered a considerable number of polynuclear neutrophiles and eosinophiles. A few *mastzellen* are seen here and there throughout the connective tissue.

The sinuses are elongated, oval in shape, lined with endothelium and are empty except for a varying amount of an amorphous, fine, granular substance. The blood-vessels are irrregular in course, traversing the connective tissue in all directions, and containing in addition to the red blood-corpuscles, many lymphocytes and polynuclear neutrophiles. The glands are of the ordinary racemose type found in this region and present no noteworthy change. These are surrounded by a varying number of infiltrating cells, chiefly small mononuclear leucocytes, plasma cells and cells intermediate between these forms.

THE PATHOLOGY OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

Read before the Chicago Pathological Society, Feb. 13, 1899.

BY DANIEL N. EISENDRATH, A.B., M.D.

ATTENDING PATHOLOGIST ST. LUKE'S AND MICHAEL REESE HOSPITALS, CHICAGO.

In 1887 Professor Weichselbaum[1] found a peculiar diplococcus which he called diplococcus intracellularis, in six cases of cerebrospinal meningitis, whose clinical histories corresponded exactly to that of the epidemic type of this disease, and not at all to that caused by the pneumococcus. He described these cocci as being particularly found within the cells of the exudate, always occurring in the form of a diplococcus with the opposite sides flattened. It grew best at body temperature, not well on blood or potato.

Considerable confusion existed until 1895, when Jäger[2] published his observations in the cases of ten soldiers dying of the epidemic form of the disease. During this period, up to the time of Jäger's article, a number of articles appeared claiming that either all forms of meningitis were caused by the pneumococcus, and that this was but a localization of the general infection with this germ, or that it was caused by a variety of the pneumococcus. Jäger completely corroborated the work of Weichselbaum, namely, that in the epidemic form the meningococcus, as it is called, is constantly found, and that it has nothing in common with the pneumococcus. In addition to its structural characteristics described by Weichselbaum, Jäger found that it has a fairly visible capsule, grew best on glycerin agar, can be more easily cultivated than the pneumococcus, and unlike the latter, has no effect when injected subcutaneously into animals. When injected into peritoneal or pleural cavities, death occurred in forty-eight hours.

Heubner[3] describes ten cases in which he found the meningococcus during life, confirmed its presence in five by autopsy, and obtained pure cultures of the organisms. He experimented upon animals, using the reversed lumbar puncture method, i. e., injecting pure cultures or fluid from cases into the spinal canal of two goats—which he had found to be the most susceptible animal. In one goat death occurred in one and a half days. The autopsy showed a hemorrhagic spinal meningitis. The exudate contained many meningococci confirmed by cultures. The organism was also found in the kidney and liver. A second goat was injected twice with cultures from a mild case, without result, but when some fluid, which had been taken by lumbar puncture from a severe case of the disease, was used, the animal died in twenty-four hours. The autopsy showed a turbidity of the spinal meninges and an acute hydrocephalus. The presence of meningococci was proven by stained specimens and cultures. This resistance of most animals to the meningoccus compared to the ease with which they are killed by the pneumococcus corresponds to the clinical observations of the greater mortality of sporadic or pneumococci meningitis—89 per cent. as compared to 50 to 39 per cent. in the case of meningococcus meningitis.

Peterson,[4] during an epidemic in Berlin, found the meningococcus in twenty-three out of twenty-six cases, by lumbar puncture.

Kister[5] found it in pure cultures in the fluid obtained by puncture in two cases of cerebrospinal meningitis, and studied it bacteriologically. The chief differences which he found were that with Nicolle's modification of Gram's method it retained the stain if the re-agent was allowed to act a short time, but became decolorized if permitted to act for some time. He could not obtain a growth on glycerin-agar.

Urban[6] succeeded in obtaining the meningococcus in pure culture in five cases of the epidemic form of the disease. He obtained an abundant growth in gelatin and on potato.

Councilman, Mallory and Wright,[7] in an exhaustive research during an epidemic of meningitis in Boston, collected 111 cases. In thirty-five of the cases in which postmortems were held, the meningococci were found either in cultures or on microscopic examination of the exudate or of the tissues in all but four cases. Of these latter, in one it had been found by lumbar puncture; in a second, there was a mixed infection with tuberculosis; two others were chronic cases. As a rule, the organisms were obtained in cultures more easily when made in the acute than in the chronic cases. Blood serum was found the best medium; very feeble growths on agar were obtained. The organism was always found in the bodies of the polynuclear leucocytes, but never within the nucleus. It was never found outside of the meninges or brain. Mixed infections were not uncommon. The pneumococcus was found seven times, and once Friedlander's bacillus. Typic meningitis in a goat was produced by inoculating directly into the spinal canal. The animal died within twelve hours, and at autopsy a slight fibrinopurulent exudate was found in the meninges of both brain and cord. The average duration of the acute cases in human beings was six and a half days, while twenty-eight and a half days can be considered an average of the chronic cases. They found the most marked lesions at the base of the brain. They were purulent infiltration of the pia arachnoid, especially around the blood-vessels. There was never as much fibrin as in pneumococcus meningitis. In the brain itself there was an increase of the neuroglia cells of the cortex, and infiltration along the second, sixth and eighth cranial nerves. A similar change existed in the spinal nerves and ganglia. The majority of the lung complications were due to the pneumococci, although in one case a thrombus composed of leucocytes filled with meningococci was found.

Hektoen[8] found the diplococcus intracellularis in pure culture in a case of Dr. J. B. Herrick's during an epidemic of the disease. The organism grew well on glycerin-agar and blood serum in the typic manner.

Kamen[9] studied the organism in a typic case, both in the fluid obtained by lumbar puncture and

from the exudate obtained at autopsy. A study of the growth of the organism on different media and upon animals coincides with that of Jäger, especially that at times the organism occurs in the form of a streptococcus. It grows in anaërobic media slowly. The following table well shows the results of various authors in the study of the organism:

	Weichselbaum.	Jäger.	Kister.	Urban.
Morphology	Biscuit form like gonococci	Biscuit form like gonococci.	Biscuit form like gonococci.	Coffee bean form like gonococci.
Grouping in cultures	Diplococci, at times tetrads.	Diplococci, tetrads, at times a streptococcus arrangement...	Same as Jäger	Same as Jäger,
Relation to cell.	Intracellul'r	Same.	Same.	Same.
Staining	Easy.	Same.	Same.	Same.
Relation to Gram	Decolorizes.	In fresh preparations or from pure cultures remains stained — in section decolorizes.	If Nicolle's modified Gram used remains stained.	Stained.
Growth on, *a*, Gelatin.	None	Only at 23° C.	None	Slowly.
b, Bouillon	None	Moderately	Good.	With formation of acid.
c, Potato	None		None	Grows well at incubat'r temperat're
d, Blood serum.	Sparingly.		Good.	Sparingly.
e, Agar.	Abundant.	Abundant.		Abundant.
f, Glyc. agar	Abundant.	Abundant.	None	Abundant.
g, Milk			None	With slight formati'n of acid with'ut coagulation
h, Blood serum agar.	None			
Action on animals ..				
a, S'bcutaneous	None	None	None	None.
b, Intrapleural	Fibrino purulent pleuritis and peritonitis.	Same.	Same.	Same.
c, Intraperitoneal				
d, Subdural	Fibrino purulent meningitis.			None.

The case which I have studied and from which the specimens shown this evening were obtained, occurred in the service of Dr. A. R. Edwards, at St. Luke's Hospital. It was a woman, 67 years of age, with typic symptoms of cerebrospinal meningitis, who died a few days after admission. At the autopsy, upon examination of the brain, the longitudinal sinus was found filled with a firm thrombus detached with difficulty from the wall. The pia arachnoid of the convexity of the cerebrum, especially over the frontal and parietal lobes, was filled with a thick gelatinous yellowish exudate, especially marked along the blood-vessels and filling the sulci. Many of the pial vessels were thrombosed. Over the superior surface of the cerebellum this exudate was again well marked. The spinal pia arachnoid showed a similar infiltration along its posterior surface, mostly in the lumbar region and cauda equina. The ventricles were empty. The examination of the other organs showed that there was no pulmonary infiltration. The heart, aorta and kidneys showed changes. The exudate was examined, and the characteristic organism found in large numbers in the interior of the polynuclear leucocytes, arranged as diplococci, resembling to perfection the gonococcus, in being biscuit-shaped, i.e , with opposite sides flattened. There were no tetrads. These were best seen when the specimen was stained with Loeffler's methylene blue. Inoculations upon ordinary and glycerin-agar, gelatin, human blood serum, milk, potatoes, glucose-agar and bouillon were made. A typic growth was obtained upon all of these media. On potatoes the growth was well-marked at the end of forty-eight hours in the form of a greyish-white growth. It grew best on glycerin-agar, and upon some human blood serum which had been obtained by venesection. Cover-slips made from all these cultures showed the typic diplococci, which did not stain by Gram, but stained by all of the ordinary stains, especially by carbol-fuchsin and thionin. Tetrads were frequently observed, and at times the streptococcic arrangement observed by Jäger and Kamen but denied by Councilman. It has been easy to reinoculate the organism, especially in glycerin-agar and blood serum, thus showing a marked difference from the pneumococcus. Stained sections of the brain and spinal cord show a marked infiltration of the pia arachnoid, with polynuclear leucocytes, in many of which the meningococcus is seen filling the cells. Many of the smaller vessels are thrombosed, and the exudate is especially marked around them. In the cerebral cortex one sees no increase of neuroglia cells or degeneration of ganglion cells, as observed by Councilman. The spinal meninges show the same changes as the cerebral. Animal experiments on white mice, when the cultures were injected intraperitoneally (for this portion of the work I am indebted to Dr. J. L. Miller), resulted in producing a fibrinopurulent peritonitis in which the meningococci were found in pure culture.

Cultures were made at the autopsy from the heart's blood, liver, spleen, and kidney. In the three first-named the cultures remained sterile; those from the kidney showed a pure growth of the meningococcus. In reviewing the bacteriology in general of all forms of meningitis, a table of 174 cases collected by Wolf is of great interest. He found in the 174 cases, diplococcus pneumoniæ, 44.25 per cent.; diplococcus intracellularis, 34.48 per cent.; staphylococcus pyogenes, 3.45 per cent.; streptococcus pyogenes, 8.05 per cent.; bacillus pneumoniæ Friedlander, 1.15 per cent.; bacillus typhi, 2.87 per cent.; other bacteria, coli, mallei, 2.87 per cent.

This shows that the meningococcus is almost as great a factor in the production of meningitis as the pneumococcus, which up to a few years was believed to be the chief organism. The fact that the meningococcus is found in the fluid from a lumbar puncture stamps the case at once as one of the epidemic type of the disease, and renders the prognosis as shown above far more favorable than infection with pneumococci. It greatly resembles the gonococcus in its form and its action on animals, affecting serous membranes only when they are inoculated with it. It can easily be distinguished from the gonococcus by culture-test.

BIBLIOGRAPHY.

1. Fortschritte der Medicin, 1887, 18-19.
2. Zeitschr. f. Hyg. u. Infectionskr., Bd. xix, 1895.
3. Jahrb. f. Kinderh., Bd. xliii.
4. Deutsche Med. Woch., 1896, No. 36.
5. Centralbl. für Bact., Bd. xx, 4 & 5.
6. Wiener Med. Woch., 1897, 39-41.
7. Am. J. Med. Sci., March, 1898.
8. Jour. Am. Med. Ass'n., July 2, 1898.
9. Centralbl. f. Bact., Bd. xxiv, p. 35.

103 State Street.

Division of Motor Nerves in Laparotomies.—P. Assmy calls attention to the neurotic atrophy of the muscles caused by division of the motor nerves during extramedian laparotomies, which, he asserts, is the cause of hernia later.—*Munich Med. Woch.*, January 31.

ETIOLOGY OF ALOPECIA PREMATURA.

Presented to the Section on Cutaneous Medicine and Surgery at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. M. BLAINE, M.D.

Professor of Dermatology and Venereal Diseases, Gross Medical College; Dermatologist to St. Anthony's Hospital.

DENVER, COLO.

In a paper on alopecia prematura, read before the Colorado State Medical Society three years ago, I referred incidentally to what I believed to be the true cause of hair falling in young men. I desire in this paper to confine myself to the causes alone, and will attempt to show that in most cases the long-accepted theories as to causation are incorrect, and that, in the vast majority of instances, the only hypothesis that will bear the searchlight of investigation is the one that I shall here set forth.

In symptomatic alopecia prematura the causes are various, but easily found. If falling of hair be associated with any visible disease of the scalp or hair, it may safely be regarded as a sequence of the graver disease, and not per se, the disease itself. The variety of alopecia prematura about which we have heretofore known nothing as to its etiology, except conjecture, is the idiopathic, or where the hair falls without any visible cause.

In searching the literature of the subject I find most authors give heredity as the cause, and in fact, many are content to mention this alone and do not recognize the many other causes spoken of by various writers. To my mind heredity is charged with many offenses of which it is not guilty. I can easily understand how one may contract a specific disease and then transmit it in its various manifestations to countless generations, but where is the microscopic germ or taint that exerts itself on the male members of the family and allows the females to retain their "crowning glory"?

I am met here by the statement that acquired habits may be transmitted. Dr. Brown-Sequard asserts that in guinea-pigs the effects of operations are inherited, and it is well known that we have succeeded in breeding a race of tailless dogs, but the cases are hardly parallel, inasmuch as the young man does not inherit his father's bald head, but instead a good supply of healthy hair, which he loses after a few years through carelessness. Trace the genealogy of a bald head back through a few centuries and it will be found that the progenitors of our race had hair in abundance.

Darwin, in his chapter on sexual selections, says: 'Many characters which there is every reason to believe were primarily gained through sexual selections, by one sex alone, have been transferred to both sexes." He also says, in speaking of the hairy family of Siam, that the king had to bribe a man to marry the first hairy woman of the family, and that she transmitted this character to her young offspring of both sexes. If then, alopecia prematura is due to heredity why does it not exercise its influence on females as well as males? I regard heredity, therefore, as the continued practice of bad hygiene rather than the transmission of any peculiar taint.

The fact that baldness is more common among men than women is accounted for by some on the ground that women have more fat, and pay more attention to dressing the hair. This theory would not explain baldness in fat men or in fastidious men who devote all their energies to the care of the falling hair.

Stiff hats are charged by many as a potential cause of alopecia prematura. Here is another fallacy, for a stiff hat on a regulation head causes no pressure on the point which marks the line of the external carotid artery in its passage to supply the scalp.

The frequent cutting of the hair is another cause often mentioned. This is contradicted by Rohé, who says: "Soldiers, who cut their hair close and often, are not more subject to baldness than others," and also says that "a close-fitting cap should be a protection rather than an injury to the hair."

Kaposi says: "In idiopathic prematura alopecia the baldness occurs without demonstrable disease of the hair, the follicle or the cutis." Were he to assign a cause, he would doubtless locate it some distance from the effect.

Many authors mention violent grief, mental labor and anxiety as producing baldness, and Jamieson explains this by saying that "the nerves of the scalp are in direct connection with those supplying the dura mater and pia mater, and that cerebral congestion will reflexly interfere with hair growth." Here is a theory that deserves some consideration and no doubt is responsible for some cases of baldness, but would only apply to brain workers or persons suffering from mental distress.

In this paper I wish, if possible, to establish the intimate relation existing between the hair on the scalp and the beard on the face, a point which seems to have been overlooked by the men who have furnished us with the excellent text-books on dermatology.

Hardaway, in speaking of prematura alopecia, says: "the hairs of the beard generally retain their pristine vigor," while Jackson, in his work on "Hair and Scalp," says, "the beard in all forms of baldness is rarely affected, a luxuriant beard being very often associated with a more or less bald head."

Whether man is the result of a long series of evolutions from a lower type of animal life, or whether he began his career on the banks of the Euphrates as a finished product matters not at this time. The point that can not be disputed is that Nature gave man a covering for his head, and so long as man remained in touch with Nature, so long has he retained the natural covering thus supplied him. The bald head can only be found among enlightened nations, and it must therefore be caused by following the arts and customs of civilization. As opposed to this condition, we find among all uncivilized nations and tribes that there is no such thing as idiopathic alopecia prematura. It is also a fact that some of these nations are beardless, others have but scant beards, while a few are noted for their wealth of beards; but it is also to be noted that the last-named allow their beards to grow unmolested. We are brought then, to the conclusion, that, in most cases, idiopathic alopecia prematura is caused by the too frequent use of the razor on the face.

It is a fact so well known as scarcely to need repetition here, that the frequent use of the razor stimulates the growth of the beard to its utmost limit, whereas, if it is allowed to grow unmolested, the growth becomes less and less each week, until at the end of six months or a year the growth is practically imperceptible. The constant drain necessary to supply this rapid growth must necessarily cause a weakness in some other part, and the region which most naturally suffers is the scalp. Again, the act of shaving

acts as a counterirritant, causing hyperemia of the face, which detracts from the nourishment of the scalp, just the same as a blister over a nerve-trunk will relieve an eczema or a zoster affecting the terminal filaments of that nerve.

The facial artery branches off from the external carotid, opposite the angle of the lower jaw, while the main artery finally bifurcates into the anterior and posterior temporal, which supply the entire scalp as far back as the occiput, or in other words the part which usually becomes bald. The nerve-supply of the occipito-frontalis muscle is obtained from the facial nerve, hence nothing in the human economy could be brought into more intimate sympathy than the blood and nerve supply of the face and scalp.

If the theory of Jamieson as to the congestion of the dura and pia mater being a cause of baldness were correct, why would not one expect to find brain workers suffering from alopecia of the face as well as of the scalp?

The period of life at which idiopathic alopecia prematura occurs is usually between the ages of 25 and 35 years. In order, then, to maintain the natural equipoise between the hair and beard, every man should allow his beard to grow during that period. I am tempted to assert that if all men allowed their beards to grow during this period there would be no baldness prior to the senile period, except an occasional case of alopecia areata. Lest my assertion might sound too strong, I will modify it and say there would be no idiopathic alopecia prematura, and yet having made the concession, I am still constrained to believe that in symptomatic premature alopecia, the disease which produces the baldness is very frequently brought about by deficient nourishment of the scalp and, therefore, might be also traced to the use of the razor.

Having thus attempted to establish my argument on theoretic grounds, I will cite a few clinical facts which I think can not be disputed.

I have never seen nor heard of an authentic case of idiopathic alopecia prematura occurring on the head of a woman. They may clip or friz their hair, wear stiff hats, do brain work, and have any amount of mental worry, but when a case of alopecia does occur, it is either of the senile or symptomatic variety. Having no beard, they do not need to shave, hence their hair receives its natural nourishment.

The Indians of North America are probably as good a type of a beardless race as we can find. I have personally seen and examined at least twenty different tribes or families of Indians, and have never seen among them either a beard or a bald head. Dr. Holder, who was for many years physician to the Crow Indians in Montana, says: "Bald heads are unknown, even though syphilis with its attendant alopecia prevails. Peculiarities of the hair are to be noted, its absence on the bodies, its scarcity on the genitals, its scant growth on men's faces, its luxuriant growth on the heads."

Many of the tribes inhabiting the islands of the Pacific Ocean are beardless, and the same conditions obtain here as with the Indians—no beards, no bald heads.

The Chinese represent a type known as semi-beardless, and since a religious significance has been attached to the queue, no orthodox Chinaman has ever applied for admission to the pearly gates minus his necessary passport.

The original inhabitants of the island of Formosa were, on the other extreme, noted for their luxuriant beards, but as these were never cut or shaved, but grew naturally, their hair also grew luxuriantly.

I do not wish to be understood as saying that shaving will produce baldness in every individual. The hair of some men will survive any abuse, but what I do say is that were there no shaving, there would be little or no baldness. Any one wishing to prove this theory will find on inquiry that, with possibly a few exceptions, every man who has suffered from idiopathic alopecia prematura, has used the razor during the hair-falling period. Lastly, as a crucial test to this theory, I have not observed a single case where I have succeeded in persuading the patient to stop shaving, but what resulted in arresting the retrograde process. It must be understood, however, that this will not reproduce hair after the damage is done, but should be resorted to while the disease is still in the acute stage.

CARDIAC RHEUMATISM.

A Continuation of the Discussion of Acute Articular Rheumatism before the Chicago Society of Internal Medicine, Feb. 23, 1899.

BY JOSEPH M. PATTON, M.D.
CHICAGO.

The cardiac manifestations of acute rheumatism which may be grouped under the term "rheumatic carditis" are the most frequent and dangerous of rheumatic manifestations. While this is true of all periods of life, it especially applies to children and early life, particularly that period preceding the fifteenth year. I do not propose to enter into a discussion of all the phases of cardiac rheumatism, but rather to direct attention to a few points of special interest in connection with rheumatic lesions of the pericardium, myocardium and endocardium.

Endocarditis.—Considering these structures with reference to the frequency of their involvement in acute rheumatism, we find that endocarditis is much more frequently associated with acute rheumatism than is any other cardiac lesion. We think, however, that a close study of the clinical history and morbid anatomy of this subject will show that endocarditis has been credited, in this connection, with much that does not belong to it. It is very difficult to determine the value of statistics in reference to the frequency of the association of endocarditis with acute rheumatism. We have one set of cases in which the endocarditis can be directly connected with a specific attack of rheumatism, and in which the effect on the heart soon becomes apparent. In the other class of cases, and perhaps they are the most numerous, the immediate occurrence of the endocarditis is not appreciated, and it passes diagnosis until its effects, separated, perhaps, from its inception by the remoteness of years, lead to a diagnosis of endocarditis, styled rheumatic, in the absence of other apparent etiologic relations. This class constitutes the majority of patients affected with cardiac rheumatism which are observed in the out-department of our clinics, and a careful inquiry often fails to elicit anything further than a history of "growing pains," tonsillitis, or chorea indicative of previous rheumatic conditions.

In this connection the possibility of the occurrence of functional systolic murmurs in connection with the anemia incident to acute rheumatic attacks must be

taken into consideration. That they do occur can not be denied, though they have been considered as organic by many. Senator considered functional murmurs as frequent in acute rheumatism, while Leube thinks they are rare. Trousseau thought their occurrence possible. Their diagnosis is not always easy, and it is sometimes only by the subsequent course or by the effect of treatment that we arrive at a positive opinion. Perhaps their mesosystolic character, as described by Sansom, may be the chief distinguishing feature. Certainly not many of us can apply to our satisfaction the elaborate and ingenious theories of Potain in connection with the differential diagnosis of organic, anorganic and functional murmurs.

According to Bamberger, 20 per cent. of the cases of acute rheumatism are complicated by endocarditis. The Bellevue Hospital Reports give 33 per cent. Sibson's analysis of 325 cases gives about 33 per cent. in which there was endocarditis alone, and in about 25 per cent. combined endocarditis and pericarditis. Wunderlich gives 9 per cent. The mean percentage, as given by various observers, is from 20 to 30 per cent. In children the incidence of endocarditis in connection with rheumatism has been estimated at from 50 to 80 per cent. Endocarditis most often occurs during the primary attack of rheumatism. In 115 fatal cases given by Poynton the attack was primary in nearly one-third. Sibson's belief that there is a direct relation between the severity of the attack of rheumatism and the frequency of complicated endocarditis is not supported by other observers. In children, certainly, the relation is not constant. Verrucose endocarditis is the rule, ulcerative forms being comparatively rare.

The physical signs of endocarditis usually appear within the first ten days of the beginning of the rheumatism. This is certainly true of the severe cases, and in the milder types we can not be sure that endocardial inflammation has not existed for some time before the signs become apparent. In adults the appearance of signs of endocarditis more frequently coincides with the onset of joint symptoms than in children, though even in the latter the evidences of endocarditis may antedate the appearance of arthritis. Acute polyarticular rheumatism is the form most frequently associated with endocarditis, though the latter may be associated with rheumatism of single joints, or even with chronic forms of rheumatism. The almost exclusive left-sided location of this form of endocarditis, as well as the great frequency of its mitral localization, is well known. In 150 cases analyzed by Poynton, the mitral valves were affected in all but one; marked stenosis was present in 9 cases, and marked regurgitation in 11 cases. In this series of cases the aortic valve was affected in 34 per cent., but in all of these it was comparatively slight except in 9 cases.

Statistics thus substantiate what is so often observed in practice, that the immediate effect on the heart of many of these cases of endocarditis is more severe than the extent of the valvular lesion, as judged by the character of the murmur, or by the postmortem appearances of the affected part, would seem to explain. In this connection, I may refer to the views already presented to this society relative to the etiology of rheumatism, with the view of emphasizing the point that the endocarditis is not really a sequel or complication of the rheumatic affection, but is a component part, and, perhaps, the principal manifestation of the rheumatic disease in a particular case, and is due to the effect on the endocardium of a microbic process, or of the toxins resulting from infection and circulating in the blood. This standpoint places the valvular lesion and its mechanic results where in the great majority of instances it belongs—a matter for the future—and emphasizes what is of vastly greater importance in the acute stages of these cases, i. e., the condition of the heart muscle. An abstract of a recent case of acute rheumatic endocarditis may serve to illustrate these points:

A boy, 11 years old, previous health good, was taken sick during the third week of November, 1898, with fever, disturbed cardiac action, slight swelling and pain in the ankle-joints. It was thought by his physician that he had, at first, an irregular form of typhoid fever. I saw him on Jan. 5, 1898. At this time there was no pain or swelling in any of the joints. There was some distress in the cardiac region, and the heart's action was irregular in force. The temperature was 100.5 F. The area of cardiac impulse was enlarged, the apex impulse diffuse and forcible, the apex-beat was in the sixth interspace just outside the mamillary line. The left border of dulness, at the level of the fourth rib, was just outside the mamillary line; the right border of dulness, at the same level, was midway between the right sternal border and the right parasternal line. There was a short systolic murmur at the base, and a well-marked mitral regurgitant murmur with an extension area of transmission toward the back. Postmortem three weeks later showed a greatly enlarged heart. All the cavities were enlarged. There was hypertrophic dilatation of both ventricles, the left much more than the right. The aortic and mitral valves showed a moderate degree of thickening, and it was evident that the mitral regurgitation was due to the stretching of the orifice more than to the valvulitis. The heart muscle was soft and friable. There was a small amount of exudation on the pericardial surface at the base of the heart.

In this case it appeared that neither the endocarditis nor the pericarditis was severe enough to cause sufficient myocarditis to result in such extensive dilatation, nor were the valvular conditions of sufficient importance to mechanically produce such a condition in so short a time. We must, therefore, refer it to a toxemia of the heart muscle.

Of the more remote effects of rheumatic valvular endocarditis, as exhibited in the various phases of chronic valvular diseases and their effects, it is not necessary to speak. They are, unfortunately, matters of daily observation to every physician. It may be remarked, however, that in many cases of mitral regurgitation there exists a considerable enlargement of the left ventricle which is usually attributed to the effect on the left ventricle of the heightened pressure in the left auricle, but which, in greater or less part, may be due to the effect on the heart muscle of rheumatic infection.

Pericarditis.—Rheumatism is the most frequent cause of pericarditis. According to Bamberger's statistics, 30 per cent. of the cases are due to rheumatism. In one hundred cases in the Boston City Hospital, analyzed by Sears, rheumatism was an etiologic factor in fifty-one cases. As a cardiac manifestation of rheumatism, pericarditis is much less frequent than is endocarditis, the latter being three times as frequent, according to Sibson. In many of the cases of pericarditis, endocarditis will also be present. This is particularly true in children, and the statement of Sturges that "the rheumatic heart inflammation of children when pericardial is always endocardial as well, and when endocardial is extremely likely, with the recurrence of rheumatism, to involve the pericardium also," may be taken as fairly expressing the relation.

Rheumatic pericarditis is more common in children than was formerly supposed. In over 50 per cent. of Poynton's cases there was severe pericarditis. In one hundred fatal cases of heart disease in children noted by Sturges, 54 were rheumatic, 46 due to other causes, and evidences of pericarditis were present in all but 6 cases. Men are much more frequently affected with rheumatic pericarditis than women. Sibson concludes that the relation of cause and effect is the same in both sexes, and that young persons subjected to laborious indoor employment are much more likely to suffer from pericarditis, when attacked by rheumatism, than are persons of mature life under the same circumstances.

There appears to be no constant relation between first attacks of rheumatism, the severity of the attack, or the number of joints affected and the liability to pericardial inflammation. Pericarditis may antedate the occurrence of joint manifestations, appear coincidently with them, or may be deferred for two or three weeks. According to Balfour, most cases occur within the first week of the rheumatism. In recurring attacks of rheumatism, pericarditis may appear with the second or third attack. In all the cases of pericarditis without endocarditis which I have seen associated with rheumatism in children, the pericardial inflammation has appeared during the first ten days of the primary attack of rheumatism. In three cases of combined endocarditis and pericarditis associated with rheumatism in children, the pericardial involvement has occurred subsequent to the primary attack of rheumatism. This conforms with the statement of Sturges already mentioned. In several cases of rheumatic pericarditis in adults there was in each a previous history of rheumatism.

It is claimed by some observers that excessive heart's action due to rheumatic conditions may be responsible for the induction of pericarditis. This is not in accord with clinical experience, nor with the present views as to the etiology of rheumatic pericarditis, though it is not unlikely that pericardial inflammation may be intensified by such heart action.

The prognostic importance of pericarditis may be inferred from Poynton's statistics, in which pericardial adhesion was present in 75 of 150 fatal cases of heart disease. In looking for the cause of the fatality of acute rheumatic pericarditis it does not appear to be constantly related to the extent of the pericardial exudation. Many fatal cases show but a moderate amount of exudate, and frequently adhesions are not fully organized, though Osler considers the first factor of prognostic importance to be extensive adhesions between the epicardium, pericardium, and external tissues of the pleura and mediastinum. Undoubtedly this is true when such conditions exist, but frequently they do not in cases which run a rapidly fatal course. As far as effusion is concerned, extensive effusion is comparatively rare in rheumatic pericarditis. To admit the truth of Sibson's statement that it is in rheumatic pericarditis that large and rapidly accumulating effusions occur, does not necessarily imply dissent from the opinion of Broadbent that a considerable amount of effusion in rheumatic pericarditis is the exception rather than the rule. In Poynton's cases, already quoted, though 75 per cent. showed more or less pericarditis, in but 25 per cent. was there any effusion, and in but six cases was the amount more than three ounces. Roberts says that "pericardial effusion, however abundant, has no direct influence upon the structure of the muscular tissue of the heart."

Myocardial changes.—That marked changes occur in the cardiac muscle in many cases of rheumatic carditis is generally admitted. The pathology of these changes is somewhat hazy, and like myocardial degenerations and inflammations in general, is involved in pathologic difference of opinion. Infiltration of the muscular tissue of the heart with softening and granular degeneration of the fibers is generally described as resulting from the extension of both pericardial and endocardial inflammation to the muscular structure of the heart, pericarditis giving rise to these changes more frequently than does endocarditis. A more diffuse form of myocarditis, with changes characteristic of cloudy swelling, is described as occurring in some cases of rheumatism, and usually associated with endocarditis or pericarditis.

Osler says that parenchymatous myocardial degeneration is met with in connection with pericarditis, endocarditis, infections and intoxications generally. Histologically there is degeneration of the muscle fibers, which are infiltrated with granules. It is probably the effect of a toxic agent. Under the head of acute interstitial myocarditis, he says that in acute infectious diseases and in acute pericarditis the intermuscular tissue may be swollen and infiltrated with small round cells and leucocytes, and the muscular fibers undergo fatty, hyaline, and granular degeneration. Dreshfeld says that in severe cases of endocarditis the myocardium shows indurative changes which may be looked upon as due to an extension of the inflammatory process; the fibrous septa and the lymphatic spaces being chiefly involved; even the muscular fibers may show changes partly due to compression, and partly to myocarditis. Roberts says that inflammation beginning in the pericardium may extend to the muscular tissues of the heart, and, possibly, through to the endocardium. The tissue undergoes acute degeneration, generally proportionate to the extent and duration of the pericarditis. The changes are attributed to the extension of inflammation, high temperature, and toxins. Douglass Powell says that parenchymatous myocarditis is secondary to infections, fevers, febrile diseases, rheumatism, etc. Leyden regards the lesion as an acute myocarditis. These opinions are sufficient to indicate the general recognition of the occurrence in rheumatic carditis of acute muscular changes of an inflammatory or degenerative nature which can not be altogether explained on the ground of extension of the inflammation from the endocardium or pericardium, nor by the mechanic effect of pericardial exudation or effusion. They are probably due to an acute poisoning of the heart muscle. There is much need of the study of the pathology of these conditions in connection with the clinical history of the cases in which they occur, in order to clear up the obscurity which surrounds them. Many rapidly fatal cases show no greater degree of pericarditis than occurs in some which become chronic, resulting in a more or less adherent pericardium. The following case may be cited as an example:

A boy aged 9 years, with marked family history of rheumatism, in April, 1888, had acute rheumatism of the joints. At the end of the first week he developed pericarditis with a well-marked friction sound. No endocardial murmurs were heard. The heart dilated very rapidly, and the boy died rather suddenly six days after the pericardial friction was first observed. Autopsy showed the heart to be generally dilated. Exudation covered the entire surface of the heart, and on separation of

the layers of the pericardial sac a typic *cor hirsutum* was observed. No effusion was present, though the dulness of percussion had extended into the fifth, right intercartilaginous space. The heart muscle was soft and flabby and would settle down over the hand when held apex up by grasping the root of the great vessels. There was slight endocarditis at the mitral valves.

In this case the pericarditis, though general, was not sufficiently advanced to mechanically result in dilatation of the heart, nor was it, apparently, severe enough to cause so rapidly fatal a result.

Cardiac dilatation.—The chief clinical manifestation of these muscular changes is cardiac dilatation. That this dilatation does not always depend on the muscular weakness incident to pericardial or endocardial inflammation is apparent from the fact that it occurs in cases where these conditions are very slight or even absent. It becomes, then, a question of interest in rheumatic conditions as to what extent the heart muscle may suffer from toxemic weakness, without exhibiting evidences of endocardial or pericardial inflammation, in connection with acute rheumatism. How far may toxic conditions of the muscle be responsible for the dilatation present in many cases? The answer waits upon a more definite knowledge of the pathology of the heart muscle in connection with rheumatic infections. Admitting that we may have such a degree of rheumatic toxemia of the heart muscle as to cause dilatation of the heart without association with clinically discoverable pericardial or endocardial inflammation, the diagnosis of cardiac dilatation and its differentiation from pericardial effusion becomes doubly important.

Ordinarily, the differential diagnosis of cardiac dilatation does not present remarkable difficulties. The clinical history of the case, together with diffused impulse; the lateral extension of dulness to or beyond the left mamillary line, and to the right as well; the equal displacement to the left of cardiac dulness and cardiac impulse; the loss of tone of the first heart sound and the rise in pitch of the second sound, together with its shorter, sharper character; and the weakened pulse, will usually suffice for diagnosis. In acute rheumatic carditis, however, when dilatation has been preceded by signs of pericarditis, it may be difficult to determine between considerable dilatation and moderate pericardial effusion. Most of us have seen cases in which this difficulty has given rise to mistakes in diagnosis, and in which exploratory puncture has proved negative.

The most important physical signs in this connection are the area and character of cardiac impulse, the extent and outlines of dulness, the character of the heart sounds and pulse, and the presence or absence of certain signs which are regarded by observers as specially indicative of effusion within the pericardial sac.

In dilatation the area of impulse is diffused and displaced to the left. The apex impulse, in the absence of hypertrophy, remains practically on its former level. In children there may be prominence of the precordial area, and some lifting motion, but the sense of contact is more appreciable than it is in effusion. The apex impulse extends practically to the extreme lower left angle of dulness. In effusion the impulse is diffused and undulatory in character, and contact is not appreciable if effusion is considerable. The lowest point of apex impulse is raised and is above and inside the lowest and left lateral angle of dulness. This raised impulse is generally attributed, in most cases, to the contact of a portion of the heart near the base of the ventricles with the chest wall, the apex being pushed back by the effusion. This is not the actual apex-beat, as was supposed by Sibson. The motion is diffused from the fourth to the second interspaces in the vicinity of the left mamillary line. It is usually confined to the third or fourth spaces. In those cases where the impulse is lower than usual it may be due to cardiac enlargement, weight of considerable fluid effusion, or, according to Ewart, to a median and vertical position of the heart, with straightening of the aortic arch. West and Albutt have observed an elastic semi-fluctuating depression in the epigastrium, which they regarded as indicative of pericardial effusion.

The area of dulness is most important in this connection. Increase in the area of dulness with alteration in its outlines is common to both dilatation and pericardial effusion. In the former the outlines conform to those of the heart as modified by the partial or general nature of the dilatation. In pericardial effusion the area of dulness is generally stated as being of a pyriform shape, conforming somewhat to the shape of the pericardial sac. Shattuck disputes the existence of a pyramidal area of dulness, and while the bulk of opinion is against him, it is certainly true that in many cases the recognition of such an area of dulness depends more on inference based on anatomic facts than it does on actual demonstration.

The outline of a large effusion is described by Ewart as "that of a bag of fluid spreading out at its base." In the differential diagnosis from dilatation he emphasizes the importance of the angular nature of the outline of dulness at the right base, and, also, at the left base. To the right, pericardial fluid gives an acute angle outward, while a dilated auricle gives a curved outline ending at the xiphoid notch. This he regards as more definite than the mere presence of dulness in the right, fifth intercartilaginous space (Rotch's sign). On the left the angular nature of the outline and the extension of dulness beyond the position of the apex-beat, which may be altered little or not at all, are important.

According to Schule, dulness over the manubrium is not sufficient for the diagnosis of effusion, as edema of the mediastinal tissues may give rise to the same sign, but when this is associated with extension of dulness beyond the apex-beat and with feeble cardiac impulse, effusion may be inferred. He states that the characteristic triangular outlines of dulness—with sides extending from the jugulum to the right mamillary line, and to the left axillary line—are produced in the cadaver by the injection of 250 c.c. of fluid, while with the injection of from 700 to 800 c.c. there is very little extension toward the right, and that, in extreme degrees of distension, the dulness extends but a finger's breadth beyond the right sternal margin, the dulness having the shape of a right-angled triangle, the hypotenuse extending from the jugulum to the anterior axillary line, and the inner side corresponding to a line drawn vertically from the right sternoclavicular articulation.

The limits of dulness may vary greatly. This variation has no interest in this connection, as extensive effusions are not so likely to be confounded with dilatation as are moderate ones. Sansom says that marked dulness extending above the third rib strongly indicates pericardial effusion. Rotch's sign of pericardial effusion (dulness in the fifth right intercartilag-

inous space) is supported by Ebstein, Osler, and others. Broadbent, Lees, and others say that it is of doubtful value. Gibson and Roberts think it can not be depended on. I have noted this sign in a case of general dilatation of the heart in which there was no effusion. Dilatation of the right heart will give dulness in the fifth interspace in some cases. It is doubtful if much importance should be attached to this sign independently of others, if we are unable to satisfactorily outline the dulness as described by Ewart. Ewart's "first rib sign" (raising of the left clavicle so that the upper border of the rib may be felt as far its sternal attachment) is of importance only in considerable effusions. It may also be found in some cases of great cardiac enlargement. The "posterior lower dull patch," which Ewart considers as a reliable sign, in the adult, of fluid in the pericardial sac, is a dull patch at the base of the left lung, extending from the spine outward to the line of the angle of the scapula, with an abrupt, vertical outer boundary. The dulness may extend as high as the level of the ninth or tenth rib, ending with an abrupt boundary. This sign has been corroborated by other observers. Shattuck says that he has been unable to determine any percussion changes in the back which could be connected with distension of the pericardial sac. I have been unable to outline this dull patch with any satisfaction, and it appears to be difficult to clearly connect it with pericardial effusion, unless, perhaps, in very large effusions.

The posterior patch of tubular breathing and egophony in the region of the point of the left scapula can only be confirmatory, as tubular breathing, bronchophony, or egophony are frequently obtained in this region in pleural effusion or any condition causing pressure on the lower lobe of the left lung anteriorly or laterally. Tubular breathing (mainly expiratory) in the right mamillary line, below the right mamma and just above the hepatic line, is inconstant, only exhibited in large effusions, and therefore of little value in differentiating effusion from dilatation. Change in the limits of percussion dulness with a change in the position of the patient is regarded as a valuable sign of pericardial effusion by several observers.

In conclusion, I would say that the character of the impulse, the indefinite nature of the heart sounds, the position of the palpable apex-beat above and inside the limits of dulness, and the alteration of the area of dulness with a change in the position of the patient appear to me to be the most valuable signs in differentiating between effusion and cardiac dilatation. While presenting for your consideration certain features of this subject which have appeared to me to be of special interest, I must yet plead the limitations of a paper already too long for the omission of other features which, to some of you, perhaps, are of paramount interest to those which have been considered.

Local Overexertion a Factor in Paralysis Agitans.—Krafft-Ebing confirms his assertions in regard to the importance of local overexertion as a factor, with an arteriosclerotic or neuropathic disposition, in the production of paralysis agitans (vide JOURNAL, p. 387), with two personal and several quoted observations. One of the former, a painter, was affected first in the left hand, in which he held his palette, and the other, a turner, in the left foot, on which he stood while he worked the pedal of his lathe with his right. Paralysis agitans should therefore rank with professional paresis and neuroses as an affection that may be caused by local overexertion.—*Vienna Klin. Woch.*, February 2.

RELATION OF CHOREA TO RHEUMATISM.

A Continuation of the Discussion on Acute Articular Rheumatism before the Chicago Society of Internal Medicine, Feb. 23, 1899.

BY ROBERT B. PREBLE, A.B., M.D.
CHICAGO.

The subject of the relation existing between chorea and rheumatism has been frequently discussed during the greater part of the last hundred years; but as yet no definite conclusion has been reached, and none can be reached so long as we remain in ignorance of the exact etiology and pathology of the two diseases. What the relation is we can not know as yet, but I believe that today almost all will agree that there is a relation. We must, however, carefully avoid the error of Billiet and Barthez, Joffroy, Graves and Sturges, who believe that all cases of chorea are of rheumatic origin. Starting then, with the confession that we have no facts to prove the nature of the relation, let us see what evidence there is to prove that there is a relation.

In the first place, how common is rheumatism in children? I have not been able to find much definite information upon this point. Coutts, at the East London Hospital for Children, found that 16 per cent. of 168 consecutive cases had had rheumatism. Donkin states that 18 per cent. of hospital cases taken at random are rheumatic. These statements are surprising, even when due allowance is made for the greater frequency of rheumatism in England, and are the more remarkable when we recall the statement of Senator, in "Ziemssen's System," that the morbidity of acute articular rheumatism is 11.5 per cent. for London. If we accept the astonishing figure of 11.5 per cent., a figure certainly far beyond the average for the world, we must remember that this is for all ages, and, according to the statistics of the Committee of the British Medical Society for the investigation of acute rheumatism, only 6 per cent. of rheumatics are under 10 years of age; in other words, something less than 1 per cent. of children in general suffer from rheumatism. I fully realize that this method of calculation is crude and liable to many errors, but I believe the result is not far from average experience. Sée states that in 11,500 cases admitted to the Children's Hospital in Paris, 48 had simple rheumatism, and 61 rheumatism combined with chorea, i. e.; less than 1 per cent. were rheumatic, and more than half of the rheumatics had chorea.

Next, what proportion of cases of chorea have had rheumatism? The statistics vary widely, ranging from those of Hughes and Brown, who found only 15 of 104 cases of chorea without a distinct rheumatic history, to those of Steiner, who found only 4 cases of rheumatism in 252 cases of chorea. Sturges admits that 42, i. e., 20 per cent., of his 219 cases of chorea had had rheumatism; Donkin that 28, i. e., 27 per cent., of 104 cases were rheumatic. Both these authors place the frequency of rheumatism in children at from 15 to 18 per cent.

I have added the statistics of Hughes, Brown, Sée, West, Ziemssen, Steiner, Ogle, Koch, Mackenzie, Sturges and Donkin, making in all 1838 cases of chorea, with 381 cases of rheumatism, i. e., 20.16 per cent. Other authors, Henoch, for example, state that one-third of the cases of chorea are related to rheumatism. If our first conclusion, that 1 per cent. of children in general suffer from rheumatism, is correct, we must assume that chorea and rheumatism have

some relation, when we find that 20 per cent. of choreic children have had rheumatism.

It would be interesting to know what percentage of rheumatics subsequently develop chorea, but there are not, so far as I know, any statistics bearing upon this point. Meyer, Rufz, Sée and Osnann state that about 0.66 per cent. of the cases treated by them have chorea. We may add to this the definite statement of Sée that he found 43 cases of simple rheumatism to 61 cases of rheumatism combined with chorea.

In 1893 Lewis presented a careful report upon the seasonal relation of chorea and rheumatism, based upon 1383 separate attacks of chorea and 675 separate attacks of rheumatism. His paper is illustrated with charts in which the curves for rheumatism and chorea run almost parallel, with the lowest point in November and the highest in March. This corresponds closely to the statement of Koch, who found 29 per cent. of cases in the first quarter of the year, 21 in the second, 13 in the third, and 37 in the fourth, while Wunderlich found 30 per cent. of the rheumatism in the first quarter, 23 in the second, 18 in the third, and 28 in the fourth.

Before leaving the statistics, let us consider the percentage of rheumatic and non-rheumatic choreics which present endocarditis, starting with the statement that Whipman, in 655 cases of acute articular rheumatism, found 205 cases of endocarditis, i. e., 31 per cent. In the report of the British Committee upon chorea, it is stated that 141, i. e., 32 per cent. of the 439 cases included in the report had organic heart lesions. Of these 141 cases, 71 were associated with rheumatism. Of the 116 cases of chorea which were rheumatic, 59, i. e., nearly 50 per cent., had heart disease. Different authors make widely varying statements. Pye Smith reports 11 fatal cases of chorea, all with endocarditis; Rogers 71 cases, with 47 cases of simple endocarditis, 5 of pericarditis, and 19 endopericarditis; Kaulich 62 cases, with 12 of heart disease; Koch 153 cases of chorea, with 21 valvular defects. These statistics are unsatisfactory, as they do not enable us to separate the rheumatic from the non-rheumatic cases. Donkin makes a report attending to this point. He reports 33 cases of chorea without history of rheumatism, who presented heart murmurs during the course of the chorea. In 28 of these he has notes on the condition of the heart at the time of discharge, and finds that 13, i. e., nearly 50 per cent., showed murmurs. Unfortunately, his data are not sufficient to allow us to decide how many of these murmurs were organic and how many were functional, but allowing even half of them to be functional, we have left 25 per cent. of non-rheumatic choreics to contrast with 31 per cent. of rheumatics who develop endocarditis. That is, we have two diseases which present the same complication in about the same percentage.

Let us briefly review other complications and symptoms common to rheumatism and chorea. Both diseases show a great disposition to return, one attack creating a disposition rather than an immunity. Both show erythematous and urticarial eruptions. Both occur as complications or sequelæ of a large variety of diseases, especially those characterized by inflammations of the pharynx. Both are at times complicated by local suppurative processes.

Those who deny any relation between the two diseases base their opinions mainly upon the following points: They deny that the statistics show any greater frequency of rheumatism among choriec than among other children. They draw attention to the fact that chorea occurs mostly among children, while rheumatism is far more common among the adults, who rarely have the Sydenham chorea, and that chorea is about three times as common in females as in males, while rheumatism is somewhat more common in males. Others, as Billiet and Barthez, note that in certain places, as Genf, rheumatism is very common and chorea is rare. Leube and other authors draw attention to the fact that the salicylates promptly affect rheumatism, but have no effect upon chorea, and that therefore, there can be no relation between the two. With this review of the evidence pro and con, let us see what suggestions we can find as to the nature of the relation between the two diseases.

A discussion of the relationship between rheumatism and chorea is so intimately connected with the etiology of chorea that one can not be considered independently of the other. There have been a variety of theories proposed to account for the symptoms of chorea, but we must not forget that all are theories. A historic and geographic study of these theories, if I may so express it, is interesting. Thus the embolic theory is an old one, and comes from the days of grosser pathology. The theory that chorea is a neurosis, a mysterious something based upon a degeneration or an inherited disposition, is urged by the French, who among the moderns are most fond of the mysterious. Lastly come the various modifications of the theory of infection or intoxication, which corresponds to the modern tendency to refer diseases to the direct or indirect action of micro-organisms. The embolic theory, which is urged by Ziemssen in his article on chorea, as practically the only theory, is declared by Gowers to have merely a historic interest. There can be no doubt of the fact that we see choreiform movements as symptoms of organic lesions of the brain, but it is questionable whether these cases should be classed with the Sydenham or vulgar chorea. The embolic theory for the chorea demands the presence of an endocarditis to serve as a source of emboli, but clinically many cases of chorea are not accompanied by endocarditis, and the autopsies of a certain number of fatal cases of chorea show no endocarditis. Moreover, the examination of the brain in fatal cases of chorea shows no changes which can be referred to embolism. Endocarditis is far more frequent, even in adult than in child life, yet chorea in the adult is rare. This difference in frequency can be quite satisfactorily explained in another way, but any difference between an adult and a child which predisposes the latter to cerebral embolism, must be a mechanic difference—and we know of no such difference—between the circulatory systems of adults and children. The same argument applies to the difference in the frequency of chorea in male and female children. Lastly, we may mention the pathologic facts that emboli when they occur are not often small and numerous, but are usually few and large, that they affect the kidney and spleen more often than they do the brain, that clinically chorea is not accompanied by symptoms pointing to embolism of other organs, and lastly, that the so-called malignant endocarditis, which so frequently gives rise to embolism, is rarely accompanied by chorea. I believe we may safely dismiss this theory from our minds.

The neurotic, the infectious and the intoxication theories of the origin of chorea are so interwoven that it is difficult, if not impossible, to discuss one without

at the same time discussing the others. Thus we find that there are no demonstrable structural changes in the brains of patients dying with chorea; the chorea presents, then, one of the most important characteristics of the functional neuroses. Like hysteria, chorea may appear suddenly after a physical or psychic trauma in an individual previously apparently normal. Most of the cases of chorea are in the female—the sex most liable to suffer from the neuroses. There is also some evidence that children of neurotic parentage are more frequently subject to chorea. However, Koch, who attended to this point especially, found that in 80 per cent. of his cases there was no neurotic taint.

Joffroy calls chorea a cerebrospinal neurosis of development, *néurose cérébro-spinal d'évolution*, an abnormal development of the motor apparatus occupying the same relation to the nervous system which chlorosis does to the circulatory system. He considers the choreic a degenerate, in whom the malformation of the motor apparatus remains latent until some precipitating cause makes it manifest. Such precipitating cause may be an infectious disease, such as rheumatism, pneumonia or typhoid. He regards the joint changes seen in chorea as arthropathies similar to those seen with myelitis, and of undoubted spinal origin. Charcot regarded the frequent association of joint changes and chorea in the same individual or in individuals of the same family as another manifestation of the relationship between diseases of the nervous system and of the joints, to which he more than any other drew attention. I do not at all believe that Joffroy is correct in calling the joint manifestations of chorea arthropathies of spinal origin, but we must assume that there is some difference in the nervous apparatus of young girls especially, which renders them liable to chorea whenever any of the immediate exciting causes come into play.

The features common to the neurotic, infectious and intoxication theories of chorea is that the function of the nerve-cells is altered without there being any structural changes demonstrable by any known method of study; the "moving equilibrium" of the cells is disturbed, but not destroyed. We can imagine that such disturbance of the equilibrium may be excited by a wide variety of causes. For example, such disturbance may be due to physical or psychic trauma, and there can be no doubt of the clinical fact that chorea does develop so immediately after trauma that we must believe the trauma the cause. Koch found a psychic trauma stated as the immediate cause of chorea in 35 of 66 cases. Mackenzie found that in 44 of 98 cases referred to fright the chorea developed within one week.

I believe that in the majority of the cases, however, the disturbing factor is more tangible than a psychic trauma. An individual predisposed by age, sex, or other unknown causes acquires some infective process. Various toxic bodies resulting from the bacterial activity are absorbed, and, acting probably upon the cells of the motor area, excite a chorea. Here also, the changes in the cells are not structural, but are nutritional or functional. Dana, Duckworth, Marfan, Koch and others express the opinion that chorea is due to the action of toxins resulting, not from a specific infection, but from a wide variety of bacteria. It is a well-established clinical fact that chorea occurs either as a complication or sequel of a wide variety of infectious diseases—rheumatism, whooping-cough, scarlet fever, measles, smallpox, typhoid, influenza, gonorrhea and others. It is not so generally known that chorea may bear the same relation to more localized infective processes, such as otitis media, furunculosis, dental periostitis and impetigo. Marfan found in 46 cases of chorea not postrheumatic, 28 cases almost immediately following some local or general infective process. In 19 cases he could get no history of any antecedent infection or hereditary taint, but states that these cases were mostly hospital cases with incomplete histories. Marfan claims that almost 50 per cent. of cases of chorea have had rheumatism. All these diseases are of undoubted bacterial origin, some due to well-known bacteria, such as the various pus cocci, the gonococci, the typhoid and influenza bacilli, others due to unknown bacteria. It is not likely that the chorea is due to direct action of these widely varying bacteria upon the nerve-cells; for usually the effects of direct microbic action are gross enough for detection, and moreover, if the bacteria acted directly they could be easily found in the nervous tissues. I believe we are justified in assuming that widely varying bacteria produce chorea indirectly by means of toxic bodies resulting from bacterial life. The action of toxins is less specific than that of bacteria themselves, and there are numerous well-known examples of the same effect due to toxins from widely varying and perfectly specific organisms. Furthermore, these toxins are often curiously selective in their action. Multiple neuritis is the best known instance of a like effect following a wide variety of toxins. There is no acute or chronic infectious disease which does not at times give rise to multiple neuritis, and there can be no reasonable doubt that this neuritis is the result of the action of toxins formed by the bacteria causing the disease. We know also that an exactly similar affection of the nerves frequently results from the action of toxic bodies which are much more tangible than the bacterial toxins—such bodies as alcohol, lead, mercury, arsenic.

Multiple neuritis will serve also as a common example of the selective action of toxins. What can be more definite than the distribution of the action of lead. We may, therefore, assume that chorea is another example of a like effect from widely different toxic bodies, both bacterial and chemic. I may mention incidentally that chorea occurs sometimes as the effect of chronic mercurial poisoning. Why these bodies affect the nerve-cells of the motor area in certain individuals and do not do so in others is unknown to us, just as it is unknown why a typhoid fever in one case is followed by chorea and in another by neuritis. The special application of all this is that rheumatism is an example of an infectious disease due to some yet unknown bacterium, which, more than any other organism, manufactures toxins which produce chorea by action upon the cells of the motor area. There seems to me to be no necessity, as there is no evidence, for the theory that chorea is a specific infectious disease due to a definite, though yet unknown organism. We may draw the following conclusions:

1. There certainly is some relation between chorea and rheumatism.

2. Rheumatism is much more frequent in children suffering from chorea than in children in general.

3. Rheumatism excites chorea by the selective action of toxins upon the motor cells of the cortex, causing functional but not structural changes.

4. Rheumatism shares this relation to chorea with a great number of other infectious diseases.

EXCISION OF TONSILS.

Read before the Indiana State Medical Association, May, 1898.

BY W. H. PETERS, B.S., M.D.
LAFAYETTE, IND.

As to the anatomy and pathology of the tonsils, I will only say that the normal throat has nothing of the kind in it. And as to treatment, nothing but removal of the diseased glandular mass gives the desired relief.

Many plans are in use to accomplish this. The guillotine will slice off the tonsil, and in children, if the claws which complicate it are removed and suitable forceps used in their place, the guillotine is fairly satisfactory, but hemorrhage is free. Though not dangerous in children, this hemorrhage is troublesome, because it interferes with the simultaneous removal of the pharyngeal tonsil, which is almost invariably present. In the adult, however, this hemorrhage is a serious matter, and has been fatal in many cases. To avoid this Burnett and other authors recommend that a snare be used—the growth being cut through gradually—several hours being consumed in the operation. The method is worthy of the Inquisition. The galvanocautery loop I must condemn by using Burnett's own words: "We may resort to the cautery *in suitable cases, which are certainly exceptional*, with a feeling of security and with the expectation of getting a thorough and satisfactory result." My personal experience with the cautery loop has been confined to a single case, in which acute otitis media in both ears resulted on the fourth day. Other authors have devised an array of scissors, cutting forceps and knives which do the work well, but the operation is a bloody one, requiring general anesthesia and an hour's time to complete it. Ignipuncture is too tedious, months being required and a bad cicatricial stump remaining.

The guillotine, then, with its danger of hemorrhage and lack of thoroughness; the cautery, with its limited usefulness; the ordinary snares, with the prolonged torture and shock, certainly indicate a demand for something different. Here let me say that the tonsil must be completely removed; that tonsils which absolutely demand removal are often deeply imbedded or diffused over a surface of an inch and a half by two inches in size. In tonsils of the kind named, the guillotine and cautery snare are useless.

In 1888 I devised a tonsil snare which was perfected in 1890, and has been in almost daily use ever since, with such satisfactory results that I beg to present it to you. The instruments I show you belong together. In small children, chloroform is used. In children over 10 years of age and in adults it is unnecessary. In children, the fenestrated tip recommended by Dr. Vedder of Pittsburg is always used. The operation is performed as follows:

In infants—the child under chloroform—the patient lies upon a couch, with his head toward an artificial light four feet away; my assistant kneels at the patient's head and I stoop over the patient at his right side. The instrument has been prepared as you see—two extra fenestrated tips being held in reserve. Here let me say that the screw adjustment in this instrument is never under any circumstances used, except to regulate the size of the loop before operating. The patient's tongue is held down by myself or my assistant, as the case may require. If the tonsil is prominent, no forceps are used, and I hold the tongue-depressor myself. If not prominent, my assistant holds the tongue, the forceps are passed through the loop, the tonsil seized, traction made, and with a single stroke the tonsil severed. The other tonsil is removed at the same time. The operation up to this time is bloodless, and now the finger explores the nasopharynx for adenoid trouble. If present, and it usually is, the mass is removed by Gottstein's curette. This operation is attended by free hemorrhage, and rouses the child. The whole operation has taken less than a minute, and the child is rolled to the edge of the couch, with his face over the opening of a fountain cuspidor. (This latter is of my own design. It takes care of any vomited matters, etc., though vomiting is very rare.) In adults a 25 per cent. solution of cocain is applied around the tonsil and in its crypts, and the tonsil is seized, drawn through the loop and severed by a single stroke.

In some tonsils, one in six, perhaps, some dissecting is necessary, and this requires only two or three rapid strokes of the knife. When no chloroform is used the patient himself, even among children, holds the tongue down with a tongue-depressor while the operation is being performed. In many cases of diffused tonsils a second or third application of the snare, without the patient leaving the chair, is necessary.

As a rule, the hemorrhage does not exceed a few drops. Only in one case has it been sharp—that of Miss Hattie K., 14 years old, living at Rensselaer, Ind., Dr. Berkley being present. In that case the tonsils were enormous, and there was a sharp gush of blood, about two ounces in all, but it stopped kindly, and in no way alarmed the child or rendered me uneasy. She returned a week later and had the second one removed—the same phenomenon recurring.

I have never seen a drop of secondary hemorrhage from any tonsil.

The snare handle is of machinery or soft steel—and is of the full size shown. A worthless imitation of this snare is on the market in Chicago. It is too light to be of value. I shall be only too glad to give to any of you drawings and specifications showing proper construction, etc. The forceps have a revolving joint similar to that of the well-known Wecker iris scissors. The forceps are easily aseptible. No. 5 piano steel wire is too small; I use No. 10. Bosworth's special tonsil snare is a beautiful instrument, but too weak, as it sometimes requires the screw adjustment to complete the operation. The snare I show you will remove any tonsil instantly and easily. The instantaneous écrasement of tonsils by the snare is, I think, original with me, and the instruments certainly are original. I use these instruments in the removal of the lingual tonsils.

Never use a wire the second time. Use a new one. Always twist the ends of the wires securely.

After-treatment.—In children there is little or no pain following and no treatment necessary. In adults, no matter how the tonsils are removed, there will be pain following the operation, except in such individuals as are by nature insensitive. The pain is less in ordinary enlargements where the gland can be wholly removed at a single stroke; but in every case there is a raw surface which will be irritated by swallowing. The patient is ordered to gargle the throat with hot water, to avoid sour and salted foods, and to eat chiefly crackers and milk and medium boiled eggs, for twenty-four hours.

THE TREATMENT OF DISEASES OF PIGMENTATION.

Read before the Section on Cutaneous Medicine and Surgery at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY JOHN V. SHOEMAKER, M.D., LL.D.
PHILADELPHIA.

A clear complexion is one of the elements of personal comeliness. A very large proportion of people who seek the dermatologist do so on account of some more or less pronounced defect in the normal and healthy coloring of the skin, especially of the exposed parts. It is needless to say that most of these patients are women. Women are naturally more annoyed and mortified by such blemishes than men. Pigmentary diseases of the skin range from the most trivial to the most serious ailment. Some involve but a slight departure from the normal, others cause extremely dark and unsightly lesions. In most cases the pigmentation is increased or modified in hue, but in a certain number it is diminished. Most diseases in which the pigment of the skin is affected depend upon some more or less grave constitutional cause. A few are merely local disorders.

Lentigo.—This is one of the most common and most insignificant of cutaneous affections. It is purely a local disorder, due to exposure to the heat of the sun and winds of spring and autumn. It is, however, a source of annoyance out of all proportion to its triviality, since it particularly attacks fair and beautiful skins. Freckles consist simply of accumulated masses of normal pigment in the mucous layer of the epiderm. Therefore, it is only necessary to remove this layer in order to cure the disease. The affected parts of the pigment layer may be destroyed by the application of any slightly caustic agent. Among those often used for this purpose are salicylic acid and corrosive sublimate. Touching each spot with strong carbolic acid is a good plan, although a better remedy is copper oleate in the strength of five to sixty grains to the ounce of excipient. The most efficient method of treating these spots is by electricity, used either in the form of electrolysis, inserting the needle superficially over the freckle, or by the frequent application of galvanism.

Chloasma.—Chloasma may be defined as a freckle on a large scale, but, unlike lentigo, it often depends upon the presence of some constitutional disorder. Chloasma uterinum is mentioned in all the textbooks, and the chloasma of pregnancy sometimes discolors almost the entire body. As regards its external causes, any agency which keeps up a habitual congestion of the skin may give rise to chloasma.

As the discoloration of chloasma resides in the same layer as that of freckles, its local management is exactly the same as in that disease. It is necessary to avoid agents like mustard and cantharides, which themselves are capable of determining pigmentation. The frequent application of the galvanic current is the most efficient means at our disposal for removal of the pigment. External treatment alone will not suffice if the cause is internal. We must address our medication to the constitutional disorder which has produced the chloasma. In many cases we must resort to gynecologic measures. In the chloasma of pregnancy we can make use only of local treatment and those tonic, laxative or diuretic remedies which may be indicated by the general condition of the patient.

Tinea versicolor.—Tinea versicolor or chromophytosis is the disease which in gross appearance most nearly resembles chloasma. Unlike the latter, it generally spares the face, although it may appear upon the neck and breast. The characteristic lesion of tinea is of a fawn color, very slightly raised above the surrounding surface, and covered with branny scales. The discoloration may be brown or nearly black. The patches of chloasma are not raised and do not scale. Chloasma is not uncommon upon the face. The parasite of tinea may be found by microscopic examination of the scales. The parasite inhabits the horny layer of the epiderm.

The treatment consists in exterminating the microsporon furfur. This object can not be readily accomplished as long as water is freely used upon the parts, as that fluid contributes to the nourishment of the parasite. Parasiticidal agents used in this disease are the mercurial preparations, chrysarobin, sulphurous acid, iodin, turpentin, resorcin, carbolic acid, etc. My favorite remedy in this affection is a 10 to 20 per cent. copper oleate ointment, which insinuates itself between the epidermic cells and destroys the parasite. It is not necessary to use a large quantity. Barely enough should be employed to penetrate the surface, any more than this being a superfluity.

Jaundice.—The discoloration due to absorption of bile pigment varies from light yellow to brown. Its nature should be easily recognized from the stain of the conjunctivæ, the discoloration of the urine and its reaction to the bile test, as well as by the accompanying general symptoms. In infants it occurs in consequence of the alterations in the circulation taking

place at birth. In some instances it is pyemic, and is caused by umbilic phlebitis. As jaundice depends upon so many pathologic conditions which belong to general medicine or surgery, the attempt to discuss its treatment would stretch this paper to an inordinate length.

Chlorosis.—In this disease the skin assumes a peculiar greenish-yellow hue, owing to the loss of hemoglobin. The red corpuscles themselves are slightly, if at all, diminished in number, but the loss of hemoglobin is out of all proportion. This fact of pathology furnishes the key to the treatment. It is imperative that the blood be supplied with iron. In recent years a number of organic combinations of iron have been added to our armamentarium and have the advantage of being more thoroughly absorbed and better tolerated by the stomach. The diet must be nutritious, perhaps concentrated or predigested, the patient must have fresh air, sunshine, and, if possible, light exercise in the open air.

Morphea.—In the early stages of morphea the affected surface is of a pink or violet hue. At a later period the color fades and the surface has the aspect of ivory, wax, alabaster or marble, or, as it has otherwise been expressed, the part looks as if a piece of lard or bacon had been imbedded in the skin. The disease is apt to appear in prominent situations, as upon the face, neck or arms. Fortunately, it is rare. We are in ignorance of the cause of morphea, although it often seems to be dependent upon disturbances of the nervous system. Treatment must be conducted upon general principles. Hygienic measures and constitutional tonics are of service. The best local methods are massage and galvanism. Morphea is essentially chronic and obstinate. If the lesions undergo atrophy, no treatment is of avail.

Scleroderma.—Scleroderma, another rare affection, may occur on any part of the body, but is more frequent upon the upper extremities. The skin becomes hard, pale and cold in lines or patches, and has been compared to that of a frozen corpse. It becomes firmly bound down to the subcutaneous tissue. When the face is attacked the features are motionless and expressionless. This aspect has been termed the "sclerodermic mask." In extreme cases the skin atrophies, the patient has a hidebound feeling and motion is difficult. Pigmentation may accompany the atrophy. Scleroderma resembles morphea in many respects, but the diseases are distinct. Both are oftenest seen in women. In both the etiology is obscure.

The treatment of scleroderma is not very satisfactory. Hygienic care, tonics and alteratives are of service by promoting the general health. Free diaphoresis, by the use of pilocarpin, is likely to accomplish some good by its action upon the sweat-glands. It is customary to make use of stimulating ointments, especially those containing mercury or iodin, upon the parts. The most promising treatment, however, is by means of baths, massage and electricity. The baths should be warm, frequent and prolonged. Galvanism, static electricity, and electrolysis have been employed with benefit by different authors.

Malaria.—Chronic malaria communicates a pale yellowish tinge to the skin. In hot climates the toxemia may so profoundly impress the liver as to produce actual jaundice. Diffuse patches of discoloration may also be caused by malaria. These may resemble or, indeed, may be identic with the patches of chloasma. Pigmentation due to malaria can only be removed by curing its cause. Among drugs, quinin, arsenic, and iron are of the most value. The most radical treatment is change of climate; if possible, removal to a district free from malaria.

Amyloid degeneration.—This disease gives a peculiar waxy appearance to the surface. As it is the result of serious organic processes which require their own appropriate management, and as it is an ultimate degenerative process, I need not enter upon the consideration of such a vast subject, chiefly of pathologic interest.

Exophthalmic goiter.—Exophthalmic goiter is generally attended by the pallor of anemia but in some instances brownish or almost black patches develop upon the body. In other cases spots of vitiligo have made their appearance during the course of this disease. Disordered pigmentation is the least important manifestation of Graves' disease. The general objects of treatment must be to tranquillize the action of the heart, allay the morbid excitement of the nervous system, and correct, as far as possible, the existing anemia. Vascular and nervous sedatives with ferruginous tonics will best accomplish these objects. Hygienic regulation is of the utmost importance.

Addison's disease.—The bronzing of Addison's disease is characteristic, and is very common upon the face and neck. The discoloration varies from amber to dark brown. Exceptionally, spots of vitiligo coexist with the general bronzing of the integument. The pathology of the malady is not yet entirely clear. The suprarenal capsules seem, in most cases, to be at fault, though it would appear that they are secondarily and not primarily affected. As the lesions are often of a tuberculous or carcinomatous character, it is obvious that the treatment can not, at the present time, be of much promise. Certain cases have notably improved under the use of extract of the suprarenal glands. In some of these cases constitutional amendment occurred without any reduction of the pigmentation. I should certainly, however, advise that this new method be given a fair trial in any case of Addison's disease. Of the more usual means of treatment, electricity has yielded better results than have followed the exhibition of drugs.

Leprosy.—Increase or decrease of pigmentation is one of the features of leprosy and possesses diagnostic importance. When fully developed, the disease should be promptly recognized. In its beginning stage, and particularly in a country where it is not often seen, it may for a time escape recognition. An early diagnosis is extremely desirable in order that an individual may not become a possible source of danger to the community in which he dwells. Of the treatment of leprosy I can, unfortunately, say little. The reports concerning Carasquilla's serum treatment do not seem to lend us much encouragement, but I am not without hope that some analogous procedure will eventually be discovered capable of affecting the progress of this terrible malady.

Syphilis.—With the copper-colored eruptions of syphilis we all are familiar, but what has been called the "pigmentary syphilide" is not so universally known. The discoloration varies from gray to brown, and is sometimes so faint that it is only perceived by reflected light. These exceptional pigmented spots of syphilis are prone to appear upon the face and neck. Sometimes the contrast of white and discolored

skin produces a dappled or reticulated aspect. I do not propose to occupy your time with any discussion as regards the treatment of syphilis. Suffice it to say that I believe in the wisdom of beginning treatment the moment that the nature of the disease is recognized—whether in the primary or secondary stage. I believe in a protracted and systematic course of mercury with certain stated intervals during which the remedy is suspended. I am of the opinion, furthermore, that there are times when it is advantageous to substitute iron and other tonics for the mercurial, or, at least, to employ them in combination.

Carcinoma.—The peculiar sallow and cadaverous color which is often present in cancer is so well known that we are in the habit of attributing to it a degree of diagnostic significance.

Melanosis.—In both carcinoma and sarcoma a very malignant form is recognized under the title of melanosis, marked by the deposit of dark-brown or blackish pigment, or melanin. Melanotic carcinoma and melanotic sarcoma occur by preference in the eye and upon the skin. Unfortunately, little of encouragement can be given concerning the treatment of melanosis.

Nevus pigmentosus.—Nevus pigmentosus is very apt to appear upon the face and neck. It is, particularly when large and hairy, a sad disfigurement to a beautiful face. I recall the case of a lovely and handsome brunette upon whose chin quite a large hairy mole had been allowed to remain, and which certainly detracted from her otherwise remarkably attractive face. Nevus pigmentosus should be removed, either by excision, ligature, caustic or galvanocautery.

Xanthoma.—Xanthoma, known also as xanthelasma and vitiligoidea, appears as a slightly elevated spot of a yellow color which has been compared to that of chamois leather. Its commonest location is upon the upper eyelid, though it occurs upon other parts of the face. It is often associated with jaundice and sometimes with diabetes and gout. It is generally necessary to remove the growths by caustics, curette or knife. Care must be taken to prevent ectropion. Electrolysis is an effective method of removal. Accompanying diseases will demand their own treatment.

Xeroderma pigmentosum.—The spots of this disease at first appear as freckles, and are apt to occur upon the face and neck. They are yellowish, brownish, or blackish in color. After having been in existence for about a year they undergo atrophy, and the skin becomes as thin as parchment. Old cases cause much disfigurement. The disease generally begins in early childhood. It is peculiar in exhibiting a tendency to malignant change from the tenth to the twentieth year of life. Xeroderma pigmentosum is a very rare affection. The treatment consists in removal of the growths.

Morbus ceruleus.—From some malformation of the heart or great vessels, the blood may be habitually overladen with carbonic acid and deficient in oxygen. In correspondence with the gravity, all that we can do is to study the comfort of the patient and make use of stimulants during paroxysms of dyspnea.

Argyria.—The grayish or bluish discoloration caused by a deposit of silver in the skin is well known, although much less common than before the introduction of the bromids, when the silver salts were the main reliance in the treatment of epilepsy. Potassium iodid is generally recommended for the purpose of removing the stain, but the attempt is not attended with much success.

Arsenic pigmentation.—The long-continued ingestion of arsenic will sometimes give rise to localized or diffuse pigmentation.

Albinismus.—In some individuals there is a partial or total lack of normal pigment. Curiously enough, this abnormality is most common in those belonging to the negro race, in whom pigment is most abundant.

Vitiligo is acquired albinism or leucoderma. Like albinism, it is most common among negroes and dark-complected whites. Patches of vitiligo are usually outlined by a dark border. This border may be removed by the use of galvanism, and the patch will then be somewhat less noticeable. Irritants, such as croton-oil, oil of turpentin, tincture of cantharides, tincture of capsicum, etc., have been applied to the whitened surface with the hope of exciting a fresh deposit of pigment.

Leukemia and pseudoleukemia.—In leukemia the skin has a peculiar and characteristic light yellow color. In pseudoleukemia or Hodgkin's disease there is habitual pallor, and when the abdominal glands are largely hypertrophied, there is also sometimes bronzing of the surface. These affections depend upon such deep-seated causes, and have such a fatal course, that treatment is essentially futile.

Striæ atrophicæ.—Atrophic lines or spots are usually the result of continued distension of the skin, as, e.g., from pregnancy. Sometimes they are of neurotic origin. They are practically incurable.

There are three agencies which are to be placed above the action of drugs or of surgical procedures in the treatment of pigmentary diseases of the skin. These are baths, massage and electricity.

Vapor baths are of value in removing pigmentary deposits, as in chloasma or in those conditions which are the results of long-continued local irritation. Various medicinal substances are used to enhance the efficacy of the liquid or the vapor, as mercury, balsam of Peru, sulphur, iodin, bromin, etc. Mercury and iodin are particularly valuable when syphilis has any influence in the production of the local condition. Both water and vapor baths are useful in removing pigmentation, when impregnated with bromin or iodin in proper proportions. The influence of immersion or contact with moist vapor is to tranquillize the peripheral nerve-fibers and the capillary circulation and to stimulate the absorbent vessels.

Massage.—In the affections named, massage is very beneficial and particularly when practiced directly after the patient has taken a bath. Massage has an excellent influence upon the skin. It increases the volume and rapidity of the cutaneous circulation, and stimulates the secretory and respiratory functions of the integument. Its favorable action upon the periphery is transmitted to the central nervous system, and therefore, all the conditions of nutrition, local and general,are improved.

Coincident with these effects the absorbent system is stimulated, and thus abnormal pigmentation is often removed. Massage is also serviceable in the reverse condition, viz., a deficiency of coloring matter, as in vitiligo, where the enhanced nutrition of the mucous layer of the integument results in a more healthy deposit and distribution of the pigment. The combination of baths and massage has produced good results in scleroderma, both as regards the rigidity of the skin and its abnormal coloration.

Electricity.—Of all the means at our disposal the use of electricity is the most powerful in restoring normal nutritive conditions to the skin. This object is accomplished by its action upon the capillary circulation and the terminal fibers of the trophic and vasomotor nerves, its quickening influence upon the lymphatic vessels, and its effects upon the cutaneous glands. In severe cases of pigmentation it is my custom to combine the three beneficial agencies which I have mentioned. I employ at different times and in different conditions static electricity, galvanism and faradism. It is often of most service to alternate the galvanic and faradic currents, thus obtaining the most potent effects of the electric force.

In freckles and chloasma the application of the electric current in the manner indicated is followed by marked improvement. In chloasma it is equally necessary to give attention at the same time to any visceral disorders which may exist. The electricity acts both as a local and systemic tonic. In connection with, or in consequense of, its tonic effect, the electric current has an excellent alterative action, and this extends to the pigmentary as well as to the other functions of the skin.

There is a large class of persons who object strongly to every operative procedure involving the use of the knife. To these the application of the galvanocautery is far less alarming, and many will consent to its use in cases of nevus pigmentosus who will not permit excision. The method is certainly effective.

In conclusion, I can express my gratification at the results which for many years past I have been able to obtain by the systematic employment of electricity in all cases of pigmentary disturbances not dependent upon lesions so grave and deeply seated that they are, from their nature, not amenable to any form or method of treatment.

MOLLUSCUM CONTAGIOSUM.

Presented to the Section on Cutaneous Medicine and Surgery, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7–10, 1898.

BY WM. FRICK, A.M., M.D.

Lecturer on Dermatology in the Kansas City Medical College and the Kansas City Training School for Nurses; Dermatologist to Kansas City, Fort Scott, & Memphis R. R.

KANSAS CITY, MO.

The titles "molluscum contagiosum," "molluscum verrucosum," "molluscum epitheliale," "epithelioma contagiosum" and "acne varioliform," have all been used to designate the same disease. Bateman, in his description of it, in 1817, used the first of these titles, and after long years of discussion and application of other titles, we seem to be coming back to a general use of the same. Especially do I think this is the better name to use since the work of Dr. Henry W. Stelwagon in proof of the contagiousness of the disease. In a paper read at the eighteenth annual meeting of the American Dermatological Association,[1] he cites about 375 cases reported by thirty-nine different authors showing contagiousness.

These cases reported by so many observers were scattered through seventy-seven years of time—from Bateman's cases in 1817 to Brocq's accidental inoculation of himself in 1894. While, from this weight of evidence, we must concede the contagious character of the disease, the evidence by the same observers would prove that the contagion is of a very feeble character. The inoculation experiments were not often successful. The special soil necessary to the propagation of the contagion is evidently not easily obtained under ordinary conditions of life. The larger number of cases were reported in schools, asylums, or hospitals for children, where conditions of soil, together with intimate association of children with each other evidently produce a favorable condition for development of the disease. Other cases where children of the same family contracted the disease from each other or where the mother, while nursing a baby with molluscum tumors on its face, developed some of the same tumors on her breast, show what intimate association may do in spreading the disease. We are not surprised to find a case of this disease passing through its entire course without any one else contracting the disease, and would not conclude that this lessens the evidence of contagiousness already cited.

Very much the larger number of cases reported have been in children. The number of lesions in any case is commonly spoken of as "a few," ten to twenty being generally about the number. The location of the lesions seems to be principally about the face, neck and hands, sometimes in other parts of the body.

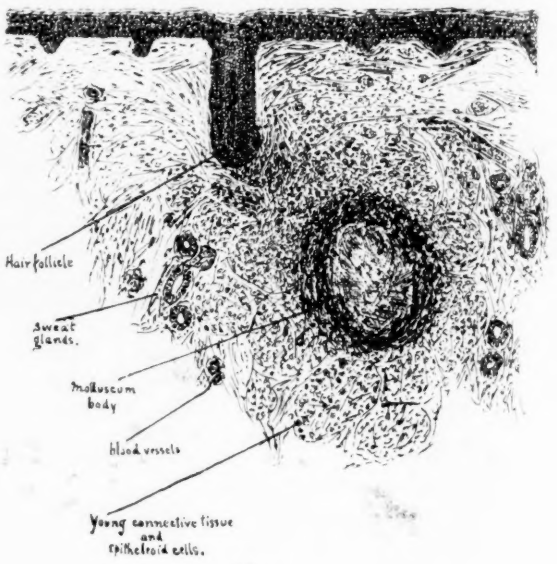


Fig. 1.

In the case I wish to report, it seems to me three things are noteworthy: 1, the patient is an adult male; 2, the lesions were very numerous—exceeding 400; 3, no source of contagion could be ascertained, nor did any one contract the disease from him, so far as could be known. The number of cases in adult males is small. I thought at first that in the number of lesions this case broke the record, but find, after looking up the literature on the subject, that this is not the case. Kaposi reports [2] that he has removed from children 80 to 100 and over; and also that he had removed 135 of these lesions from the penis, scrotum and inner part of the thigh of a man. Ebert reports [3] a case in a 14-year-old girl, of 108 in the face. Prince A. Morrow reports [4] a case where over 300 of these growths were removed from the body of a patient. R. W. Taylor, in a lecture delivered to the New York Post Graduate Medical School,[5] says he has the photograph of a child

[1] Journal of Cutaneous and Genito-Urinary Diseases, February, 1895.

[2] Vierteljahrschrift für Dermatologie and Syphilis, 1877, p. 334.
[3] Archives für Dermatologie and Syphilis, 1879, p. 86.
[4] Journal of Cutaneous and Genito-Urinary Diseases, 1895, p. 75.
[5] Medical News, March 15, 1890.

on whom were between two and three thousand of these little growths. Madrezejewski[6] reports a case of more than three thousand of the little tumors, varying in size from a pea to a child's head.

Case 1.—The patient is a man 38 years of age, married, but has no children, an American, and by occupation a locomotive fireman, on the Kansas City, Fort Scott & Memphis R.R.

His mother died of pneumonia at the age of 52 years, having been previously healthy; one brother died at the age of 6 years; his father, one brother and three sisters are living and all in good health. no history of any hereditary disease is known to him. No skin disease of any kind exists in the patient's family as far as known.

The patient is fairly well nourished in appearance, is six feet in height and weighs 150 pounds. He has never had any severe illness, has considered himself perfectly healthy all his life, except for a psoriasis on his legs below the knees; this he has had since 12 years of age and several times there has been an extension over his whole body, but in a light form, and it never gave him any trouble. In the early part of November, 1896, he had concluded that he needed some "blood medicine" and took some patent sarsaparilla preparation. In a few days a number of papules appeared around the mouth, on the lips and chin. This eruption, he thought, was caused by the medicine, so he ceased taking it. The eruption continued to increase in the number of lesions, gradually extending over the face, up over the forehead into the hair of the head, on the ears, eyelids, eyebrows, down on the neck, and later on, two or three appeared on the hand.

I first saw the case late in December, 1896. At that time the lesions covered all these parts mentioned, except those on the hand, which appeared during the course of treatment. At that time they ranged in size from a pinhead to a good-sized pea.

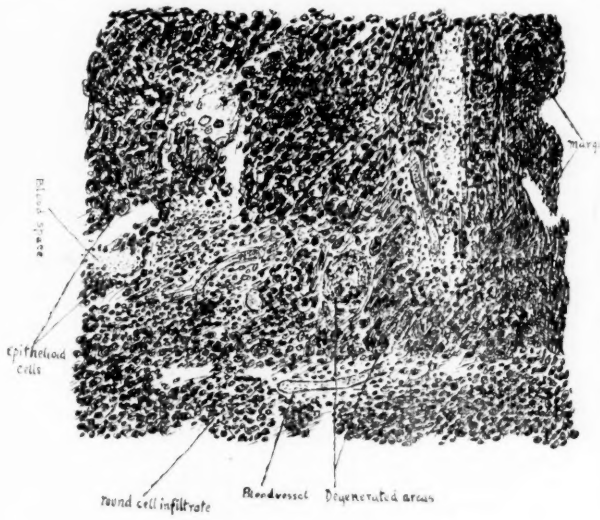


Fig. 2.

Later a few grew to be much larger, and one grew to be three-fourths of an inch in diameter. They were thickly distributed over the surface, but generally discrete; at a few points they were so close together as to form apparently one tumor with the contents of three or four. None of them were pedunculated, some were very slightly elevated, most of them were rather whiter than the normal skin, and many were slightly umbilicated, giving somewhat the appearance in contour of an urticaria lesion. Some lesions were reddened from inflammation. These were generally more elevated than the others and contained some pus in addition to the molluscum material. The contents of a few lesions could be squeezed out with the thumb-nails, but they were situated deep in the skin, and generally required a slight incision before they could be extruded. The contents of a tumor came out as an ovoid, semi-transparent, slightly yellowish body with a sharp point at one end. The consistence was that of a thick jelly, and upon exposure to the atmosphere for a few hours, they almost completely dried away. The molluscum material generally held well together in a body, and if pus existed along with it, the two materials could be well distinguished and the pus could be washed away, leaving the other intact. In some few of the older tumors the contents was broken up; it was not like sebaceous material, for that is opaque and white.

After pressing out the contents of a tumor a very distinct cavity could be felt with a probe. Bleeding was quite free, lasting several hours after expression of tumors. In treating the case at first, we simply removed the contents of the tumors and used local antiseptics to the surface of the skin, but the tumors soon formed again. Then after removing contents we applied pure carbolic acid to the cavities. After this they slowly disappeared, leaving superficial scars for a time. More than 400 of these tumors have been destroyed in this way; a large number of scars are still on the face, but are gradually fading.

There is still an occasional molluscum tumor to be found and destroyed, but very few. On the chin were six or eight tumors, more like ordinary warts, from which no contents could be removed without cutting out the entire tumor. These disappeared during the course of treatment, and I have thought they were nothing but warts and had only an accidental connection with the tumors.

Dr. James J. Clausen has been kind enough to microscopically examine the expressed contents of some of the tumors and also a dissected tumor, with the idea of ascertaining the anatomic position of the tumors and the pathology of its contents. His report follows:

Pathologic anatomy.—Microscopic sections were made from several lesions removed, representing two widely different stages of the disease:

1. An early lesion of very small size, subcutaneous; the skin overlying, apparently intact and smooth, was excised. Unfortunately, in cutting this little specimen the molluscum body with its surroundings tore loose from the overlying skin; but judging from comparison of numerous sections cut at different levels, the accompanying drawing (Fig. 1) gives the most constant relation of the small molluscum body to the skin and its appendages. The molluscum body itself is degenerated to the extent that no cells or nuclei can be outlined. The outer part takes a deeper stain than the center. Immediately surrounding the body and merging into it are many oval or circular areas of partially degenerated young connective tissue. Some of the connective tissue cells are larger, resembling very much the so-called epithelioid cells found in tuberculous inflammation. The molluscum body is nowhere found directly continuous with the epithelium, neither of hair follicle, skin nor sweat-glands.

2. Microscopic sections were also made from older and larger lesions which were loosened by a suppurating process around them so they could be expressed. Fig. 2 represents a small portion of such a molluscum body. It is characterized by a general round-cell infiltration; vascularization has partially taken place in the interior thereof, being traversed with new capillaries and apparently also irregular blood-spaces. At the margins are found homogeneous, almost structureless areas, while a few degenerated masses, the size of giant cells, containing very few or no nuclei, are seen scattered through the lesion. Interspersed here and there between the round cells are a few larger cells with plain nuclei, but partially degenerated cell bodies, also resembling epithelioid cells. In general it is the picture of chronic inflammation in connective tissue, the degenerated masses being constantly found farthest removed from the circulation.

As the clinical behavior of this case has been that of a perfectly typic molluscum contagiosum, I much regret that I have not had the opportunity to make a bacteriologic investigation. I should likewise like to examine repeatedly excised complete lesions with their true relation carefully preserved, in the various intermediate stages of the disease. The microscopic findings so far have made me at least suspect that the above disease may not be an epithelial new growth; but a chronic inflammation due to infection, entering the body through the appendages of the skin.

I am very sorry we did not have the opportunity to begin microscopic investigation earlier, as then better results might have obtained. The specimens examined were typic ones, however, and only needed a larger number to be more conclusive.

The patient's general health remained good. His psoriasis continued as usual, not being modified at all by the disease or its treatment. Internal treatment was confined to simple forms of tonics. Patient could

[6] Medical News, Sept. 22, 1885, p. 314.

not recall coming in contact with any one who was similarly afflicted, and up to date no other person has contracted the disease from him. He is a man of good habits and cleanly about his person. This probably accounts for no further spread of the disease.

One thing observed about this patient was the apparently coarse texture of the skin. I mean by that the openness of the pores, which possibly may have given a favorable opportunity for the entrance of the contagion.

From the study of this case and the reports of others I would draw these conclusions:

1. The disease is contagious, but very feebly so.
2. The anatomic character of the tumor is not satisfactorily known, being generally considered an epithelial growth, the origin of which is in dispute; while some regard it as an inflammatory connective tissue proliferation in which early degenerative changes take place.
3. To remove the disease effectually it is necessary to destroy the contents of the tumors completely.

Room 301, Rialto Building.

CONVENIENT FIRST DRESSINGS IN LEG FRACTURES.

Read before the Fifth Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Oct. 5, 6 and 7, 1898.

BY EDWARD H. TRICKLE, M.D.
SURGEON T. & O. C. EXT. R. R. CO.
CUTLER, OHIO.

While my surgical experience only dates back thirty years, my observation of the management of leg fractures extends over half a century. When but a boy of 10 years of age, my brother had his leg broken below the knee while wrestling. The village doctor was called. He inspected the leg and sent me to bring him seven yards of calico. He tore off one strip for a bandage, split a shingle in two or three pieces, laid them around the leg, rolled his calico bandage around the sticks and directed the family to keep it wet with cold water. With every movement of the body my brother would howl with pain. After a long time he got around with crutches and finally walked, but his leg was badly crooked. Fortunately, a few years later he sustained another fracture of the same leg, and the surgeon in attendance kept it upon a patent posterior wooden splint and straightened it out. Since that time I have never taken kindly to splints, bandages or fracture-boxes.

It may be supposed that at this late day the old custom of splitting shingles or yanking palings off the fence to use as splints for fractures is obsolete, but less than ten years ago I was called in consultation to see a fracture case, and found the leg held in line by broken sticks, the splintered ends of which projected beyond the bandage at the foot and knee. It was hot weather, and the leg thus dressed had for three weeks been kept in soak, so that the stench was intolerable, while maggots were disporting themselves in the old bits of quilt or comfort packed around the leg in the box. There was no union. I cleaned up the leg, put a firm plaster case around it and told the man to get up and walk on it. He did so, and in time thus brought about consolidation. There can be no possible excuse for such poverty of resource or such criminal neglect of the simplest rules of hygiene.

We now find upon the market a great variety of fracture appliances: coaptation splints that fit the normal contour of the leg—posterior, anterior or lateral, as we may wish. All of them are useful in their way; some of them quite ornamental. We appreciate them, but it is our right and duty to improve on them if not entirely satisfactory. My objection to any splint is that it requires a bandage to hold it coapted to the leg. A fractured leg, if dressed immediately, will always swell more or less, and this subjects us to another call for the purpose of removing and reapplying the bandage. If this occurs and we fail in attention, the patient suffers, and irreparable damage may result. Splints and bandages are for this reason unsatisfactory, and I have discarded them, and have gone—not back to the old fracture-box—but forward to the newer conception of one that fits the leg like a stocking, and floats suspended a few inches above the bed instead of resting upon it.

How is this fracture-box made and of what material? It can be made over the leg at the time of the first dressing, as follows: After the leg is properly cleansed and rendered aseptic, it is enveloped in surgeon's cotton and suspended in cheese-cloth, which adapts itself to the lower and lateral contour of the leg. Two strips of half-inch poplar board, shaped to fit the anterior contour, are clamped in against the sides of the muslin until they meet, thus closing the cloth around the leg like a stocking. The clamps resting on the instep, along the shin and in over the knee, are fastened together by bolts. Extension is made and maintained while plaster of Paris is applied sufficient to make a firm case. This may be done by passing the plaster bandage in roller form back and forth along the leg, or by strips of muslin saturated with the plaster cream laid on and smoothed down with the hand until the requisite thickness is obtained. It sets in ten or fifteen minutes, during which time extension must be maintained. The clamps are then removed, the muslin trimmed at the top and about two inches of it turned outward and downward over the sides of the case. The leg thus cased is again suspended in cheese-cloth and clamped in at the top to maintain its coaptation to the leg until it is convenient to lace it with rubber cord, as you see in the sample before you.

The dressing thus applied is perfectly conformed to the leg, is open at the top, can be drawn apart for inspection, and when suspended moves when the body moves, causing no disturbance at the seat of fracture; yields sufficiently to accommodate swelling, and its alignment is maintained by the clamp, even though the case be light and fragile. I can not claim for this manner of "first dressing" any advantage over the ordinary apparatus in the way of convenience, but we avoid the later *in*convenience of having to go back and readjust the bandages on account of swelling.

I now invite your attention to a "Normal Contour Fracture-Box" made of different material. It can not be made over the broken leg, but is molded over a plaster cast of the human leg. It is composed of screen-wire, cheese-cloth and a combination of adhesives which fill the meshes of the cloth and wire, and when dried make a hard, firm case, which retains the form into which it is molded, but is so pliant as to permit of being drawn apart for the reception or removal of the leg at our pleasure. A set or two of these prepared cases—rights and lefts—are, like Mrs. Toodle's coffin, "handy things to have about the house," and when we are called to a case of fracture, all we have to do is to police the leg, lay it in the

case, face it up and suspend it; we can then take our leave feeling that our patient will rest in comfort and safety. As you will observe, these prepared cases are light, sufficiently firm, exactly fit every part of the leg, preserve the normal alignment of the bones, and by their gentle embrace invite repose of all soft parts that may incline to distortion by spasmodic muscular contraction. The malleoli and condyles are embraced; the calf and heel rest in depressions exactly fitting their normal contour and thus maintain extension on the principle of the double inclined plane, the heel, calf and lower third of the thigh lying in depressions. When tired of lying on his back the patient can, after the first nine days, lower the suspension apparatus and turn on his side, letting the leg rest on the bed, and I doubt if there would be disturbance of the fragments even should he throw the other leg over it. Should the fracture be compound, an opening can be made in the case for observation and dressing, but as the case spreads apart so easily, I prefer lifting it out by its cheese-cloth envelope for more thorough inspection and cleansing.

The anterior splint, composed of the same material as the case and exactly fitting all the normal curves of the leg, is two inches wide and fills the gap in front. The lacing passes back and forth over this, and, however tightly drawn, makes no impression on the circulation beneath. You will observe that the case is open clear down to the heel. This is to enable the leg to be lowered into its bed without letting up on extension until the calf and heel are imbedded and the case coapted to the leg. The foot-rest, of like material, is also molded to the normal curves of the foot, and can be fastened on or removed at pleasure.

In conclusion, let me say that the comfort and welfare of a patient with a broken leg should always receive our kindest consideration. Our thought, like an X-ray, should penetrate and unmask all abnormal conditions, and our effort should be to promptly adopt such remedial measures as the case may require. The dressing I have presented here is not perfect; but if it should be regarded as an improvement on existing methods, it shall be my endeavor to still further advance the lines toward my conception of a perfect "Normal Contour Fracture-Box."

Of the suspension apparatus, it is needless to speak. Each surgeon contrives his own. The necessity for suspension everyone must realize when we consider that a lateral motion of the hips can not be made without strain at the seat of fracture, and immobility of the malleoli and condyles which project does not insure against mobility of the fragments, enveloped as they are by the soft parts. Fixation at the knee and ankle by a fracture-box lying on the bed implies at least lateral fixation of the hips; otherwise there will be pain and mischief. Suspension, allowing, as it does, the leg to float freely with any movement of the body, is a safeguard against pain and injury from this cause. The old-time method of boxing and soaking the leg forcibly suggests Hamlet's idea of death: "To lie in cold obstruction and to rot." Then amputation in compound fractures was the rule rather than the exception. Now, with our antiseptic methods and abundant supply of scientific appliances, we approach such cases with a consciousness of mastery.

Let us have a Department of Public Health!

MALARIAL HEMATURIA.

BY F. G. DU BOSE, M.D.
SELMA, ALA.

The hemorrhagic type of malarial fever, while fortunately infrequent, is nevertheless a most serious disease. The overwhelming production of, and intoxication by, the malarial organism, causes extreme hyperemia of the viscera, and partial disintegration of the blood. Hemorrhage most frequently comes from the kidneys alone, although it may appear from the several mucous membranes simultaneously. These are occasioned by blood, nutritional and pressure changes in the congested area. I doubt if anyone has lived long in a malarial district and countenances Dr. Koch's theory that quinin is the causative agent. I have seen four cases where no quinin was taken prior to the hemorrhage; one of these, a child, died the following day from suppression of urine.

The previous history of these cases presents the mild remittent or intermittent fever in most instances. We have no premonition of the occurrence of hematuria. Its appearance on urination after a chill, is the first index to the real condition. Jaundice rapidly develops, varying from a yellow tinge to a bronze color. Temperature ranges from 101 to 105 F; pulse rapid, 100 to 120 per minute, small, with a thrill and often dicrotic; tongue thick, heavily coated, with imprint of teeth on margins. Vomiting and nausea are constantly present. Black vomit occasionally occurs. Bowels are constipated as a rule. Headache, pain in the back, and aching in the bones and extremities constitute the usual subjective symptoms. The mind is clear until uremic intoxication begins. The advent of delirium or coma is most unfavorable.

On account of the diversity of medical opinion regarding the treatment of this disease, I shall give in detail the method employed by me in ten successive cases without a death. The fatal case mentioned above was the first one in my practice, and received only the hypodermics of quinin and symptomatic treatment. As soon as the diagnosis is made, a hypodermic of morphia and atropia is given, followed immediately by a ten-grain dose of calomel, swept down with a glass of water. Five grains are repeated every two hours, till four or five more doses are given, or until the urine begins to be secreted in larger quantities. It has been my observation that calomel in such enormous doses, fortified by the hypodermic injection of morphin and atropia, is a rapid and most powerful diuretic. When so administered, I have never seen it act as a drastic purgative, nor have I witnessed evidence of mercurial poisoning. I remember after having given one patient thirty-five grains in divided doses, to have administered a goblet of Rubinat water eight hours after to secure the evacuation of the bowels. Besides being one of the best diuretics, it is also an efficient intestinal antiseptic, and perhaps a cholagogue. In cases where the patient can be seen two or three times a day, quinin should be given hypodermically, combined with morphin and atropia.

The following is the formula used by me:

Quinin bisulph.	5 gr.	32
Morphin sulph.	$\frac{1}{8}$ gr.	008
Atropin sulph.	$\frac{1}{200}$ gr.	00033
Aqua.	30 m.	195

Misce. Sig. For one injection. To be repeated every eight hours.

The skin over the calf of the leg, where the needle is to be introduced, should be scrubbed with a little

alcohol, and the medicine injected deeply into the muscles. I have never had an abscess to follow. I think these result either from lack of surgical cleanliness or from using a supersaturated solution of quinin injected at a higher temperature than that of the body. On cooling, recrystallization occurs; these crystals, acting as foreign bodies, are the beginning of abscesses. If patient can not be seen frequently, I give the following:

Quinin sulph.	5 gr.	32
Camphor monobromate.	2 gr.	13
Morphin sulph.	1/12 to 1/8 gr.	005 to .008
Atropin sulph.	1/200 to 1/600 gr.	00033 to .00011
Capsicum, pulv	1/2 gr.	03

Misce. For one capsule.
Sig. One every four or five hours.

If the temperature is above 102.5 F., I give the following:

Phenacetin	3 to 5 gr.	20 to .32
Caffein.	1/2 to 1 gr.	03 to .065
Sodium bicarb.	1 gr.	065

Misce. For one powder. To be repeated every two hours until temperature is reduced.

Copious draughts of skimmed sweet milk and water are insisted on. One to two large saline enemata are given daily to increase diuresis. These are introduced high in the bowels and retained as long as possible. Sinapisms are applied across the back, over the kidneys, and to the epigastrium; hot-water bottles are placed upon the patient, especially during the time the paroxysm is likely to occur.

I have seen cases recover where death seemed almost inevitable. I have such implicit faith in the above treatment, that I no longer dread having charge of such cases.

Since writing the above, I have had occasion to treat a case of this disease, and herewith append the history:

Thomas J., white, age 40 years, a farmer, slept two miles from Blue Girth Swamp all the summer. He had chills every seven, fourteen, or twenty-one days from July, 1898. After each paroxysm, he would take three to five grains of quinin three times a day, and sometimes a small dose of calomel. He had taken no quinin for three weeks prior to this attack, which was initiated at 4 P. M., January 23, by a chill. Severe vomiting and purging followed, and at 8:30 P. M., temperature had risen to 104, pulse 80.

January 24, 9 A. M., temperature was 98, pulse 72. I gave fifteen grains of quinin. I was sent for in great haste at 5 P. M. and found patient had passed a few ounces of bloody urine. At this time temperature was 97.5, pulse 90. I immediately gave ten grains of calomel and a hypodermic of morphin, 1/4 grain and atropia 1/150 grain. At 9 P. M., his temperature was 104, pulse 120, he was constantly nauseated and vomited everything taken into the stomach, and complained of pains in the head, back, and extremities. I gave hypodermically, quinin bisulphate 5 grains, morphin sulphate 1/8 grain, atropia sulphate 1/100 grain, and prescribed phenacetin, camphor and caffein to reduce high temperature. The bowels acted twice during the night.

January 25, at 8 A. M., he received another ten-grain dose of calomel and hypodermic of the quinin mixture. He had passed about 16 ounces of urine during the night, which was as black as ink. During this day his temperature and pulse remained the same as the night before. At 3 P. M., and again at 9 P. M., he received another hypodermic of quinin mixture. His bowels had not moved, although he was given a saline enema. His temperature was 104.5, and pulse 120; mind wandering, very restless, vomiting milk in large curds; gave another ten-grain dose of calomel and a saline enema at 9 P. M. The conjunctiva became yellow, and the skin slightly tinged during this day.

On the morning of January 26, he was very much jaundiced, his temperature was normal, pulse 110, urine passed in large quantities and much clearer. At 4 P. M., temperature was 101, pulse 115; he received two hypodermics daily of the quinin mixture, till January 29. The urine cleared up, temperature became normal, and the patient made complete recovery.

THE ETIOLOGY OF SEASICKNESS.

BY WM. EDGAR DARNALL, A.B., M.D.
Physician to the Atlantic City Hospital; Fellow of the American Academy of Medicine; Member of the Medical Society of New Jersey, and Vice-president of the Academy of Medicine of Atlantic City.
ATLANTIC CITY, N. J.

Seasickness is a thing that in these days of so much water travel is quite common, and to which it seems the medical profession has given but scant attention. There is little literature on the subject. It is one of those unsettled questions about which each man may pursue his own theory as to etiology unmolested, provided only that he hit upon some method for the relief of its symptoms. There is no pathologic evidence connected with it, so far as I know, and the clinical manifestations of the malady are all we have to guide us in seeking a rational cause for them. The assertion may safely be ventured, I think, that the seat of the trouble does not lie in the stomach itself primarily, but that the vomiting is a reflex phenomenon. It is not a disease, but the symptom of a condition.

Seasickness is no respecter of persons. It attacks rich and poor alike. Neither youth nor age permit escape. Robust health and constitution are no guarantee against it, and the fearful nausea and depression it produces come alike to all.

Without entering into a description of the familiar and vivid symptoms, which are indelibly stamped on the mind of everyone who has suffered from this malady, we may at once pass to the consideration of a cause which seems rational, and therefore worthy of study. This cause is the disturbance of the sense of equilibration, the organ of which is situated in the petrous portion of the temporal bone. In order to make the subject clear it will be necessary to review the anatomy and physiology of the internal ear.

The internal ear is composed of the cochlea, a vestibule, the semi-circular canals and the membranous labyrinth.

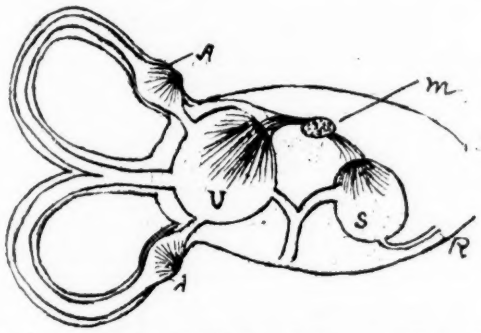
The vestibule is the common central cavity of communication between the parts of the internal ear. It is situated on the inner side of the tympanum, behind the cochlea, and in front of the semicircular canals. It is somewhat ovoidal in shape from before backward, flattened from within outward, and measures about one-fifth of an inch from before backward.[1] It is not necessary here to describe all the features seen on the walls of the vestibule, but on its inner wall should be mentioned a depression—the fovea hemispherica—perforated by several minute holes for the entrance of the auditory nerve. This is known as the "macula cribrosa." On the upper wall or the roof is a depression—the fovea semi-elliptica—and to this is attached the utricle. Behind the vestibule are the three bony semicircular canals opening into it by five openings. They are about one-twentieth of an inch in diameter. Each presents at one end a dilation about twice the diameter of the canal, called the "ampulla." The canals are superior, posterior and horizontal, and are arranged so that each is at right angles to the other two, thus forming three distinct planes for the body. The superior and posterior canals unite and form a common opening at the back of the vestibule.

The membranous labyrinth of the canal consists of a membranous tube loosely filling each canal, but dilated at the ampulla to correspond with the bone, and closely adherent to the bone at the ampulla. At each end these membranous canals are joined to a

[1] Gray's Anatomy.

membranous sac called the "utricle," which lies in the posterior upper end of the vestibule. This utricle is joined by a Y-shaped tube to the smaller membranous sac in the vestibule called the "saccule," the stem of the Y-shaped tube passing through the aqueductus vestibuli. A small tube—the canalis reuniens—now unites the saccule with the scala media of the cochlea. The membranous labyrinth is held in position by small fibrous bands stretching from the bony walls to the membrane. This space around the tubes is filled with a liquid, the perilymph, while inside, the whole labyrinth is filled with the endolymph, a limpid and very mobile fluid.

The old classification of the cranial nerves by Willis into nine pairs, because there were nine foramina of exit at the base of the skull, was soon found to be unscientific. That of Soemmering into twelve pairs, which is taught in most of our text-books, is inadequate. The chorda tympani is described as a branch of the seventh, but Barringer classifies it as a separate and distinct nerve, and calls it the thirteenth. Again, the eleventh arises from two sources, and is perhaps two distinct nerves. So the eighth arises from two nuclei, the median and the lateral, situated on the floor of the fourth ventricle of the brain. It is not surprising, therefore, to find it controlling two distinct senses. It soon separates into two branches, the dorsal and



U. Utricle. S. Saccule. M. Macula cribrosa. Canalis reuniens. A. Ampulla. Horizontal canal not shown.

ventral. These are in reality two separate nerves with separate functions. The fibers of the dorsal branch originating in the median muscles supply the cochlea, those of the ventral originating in the lateral muscles supply the vestibule and semicircular canals. This branch is in intimate connection with the cerebellum. It is known as the vestibular nerve, and is the nerve of the sense of equilibration. The vestibular nerve enters the inner wall of the vestibule through the macula cribrosa, and divides into three branches, which supply the ampulla of the canals, the utricle and the saccule.

The special sense of equilibration is a most delicate beautifully constructed organ. In each ampulla there projects from one side of the membranous canal an elevation from which a series of fine hair-like rays extend into the cavity of the ampulla, these being the specialized terminal fibers of the vestibular nerve. In the utricle and saccule there is an equally elaborate arrangement. It is less elevated than the other, and has entangled in its hair-like processes, like pebbles in the grass, small particles of calcium carbonate, to which the name otoliths has been given. The function of these beautiful terminals seems to be as follows: The endolymph, by reason of its mobility, is free to move in the canals, so that when any movement of the head is made in the plane of any canal the endolymph of that canal by reason of its inertia seems to flow against the movement. This causes a streaming of the endolymph through the hair cells, which cells, of course, move with the head, and a stimulus is thereby imparted to the nerve endings in these hair-like processes. By the movement of this fluid and its influence on the vestibular nerve terminals, we are enabled to judge of our relative position and plane of movement in any act.[2] If there were no other senses to guide us we would by this sense alone be able to judge whether we were in one position or another, whether we were standing on our heads or our feet. It is the derangement of this function of equilibrium which produces the staggering, giddiness and vertigo associated with the interesting condition known as Menière's disease.

Most of our disagreeable sensations are the result of overstimulation of some one or more of the special senses. Too much light hurts the eye; a sound often hurts the ear; too much touch in rough handling or injury causes pain; the temperature sense becomes painful when affected by excessive cold, as well as when overexcited by too much heat. Even a taste or an odor may be said to be painfully disagreeable. It is to be noted also that in many cases of this kind vomiting is associated. A strong light often affects the sensitive eye to the point of a sick headache. The vomiting reflex is in such intimate connection with the whole organism that it may be stimulated by impulses from almost every part of the body, sight, hearing, taste and smell being no exception. To this should be added equilibrium, for it is as much a distinct sense as any other, and may in the same way excite vomiting by reflex action.

Children in play whirl around till they "get drunk." Here they have continued the motion in the horizontal plane until the motion becomes transmitted to the endolymph of that plane. This motion still going on after their bodies have come to a stand-still, gives them a sort of vertigo so that they are unable to steady themselves, and indeed often become sick and vomit. Others can not swing in a swing. Some can not ride backward in vehicles or cars without the sick feeling. Many will complain that they feel the motion of the cars for hours after they have left the train, and who, after a day's sport in the small fishing smack, even if he was not seasick, has not felt the undulating rise and fall of the boat hours after he has returned from the expedition?

The small breakers hardly affect the large boat at sea, but the regularity of the heaving swells, over which the majestic steamer deliberately rides, settling itself again for the next one, is what upsets the passenger. When this motion has continued for a while it becomes so disagreeable that the passenger is no sooner safely over one swell till he begins to wait in dread for the onset of the next. After a while the motion of this wave with its regular rhythmic intervals becomes transmitted to the endolymph of the semicircular canals. This continual flowing in a given plane overirritates the fine hair-like terminals of the vestibular nerve in the labyrinth, and reflex impulses are sent therefore to the vomiting center, which, with the nuclei of the eighth nerve, also lies in the fourth ventricle. There follows obstinate vomiting associated often with great prostration, from which there is very frequently no relief until the sufferer has landed.

All sorts of diet have been ordered, all kinds of med-

[2] Barringer's Lectures on Physiology, University of Virginia.

icine given, but little success has been attained through efforts directed to the stomach, for as long as the patient is on board and the ocean swells, the wave motion is transmitted to the endolymph, and those susceptible to the reflex irritation suffer. Attention should therefore be given to the nervous condition of excitability rather than to the stomach.

121 South Illinois Ave.

CONSERVATISM IN RAILROAD SURGERY.

Read before the Fifth Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Oct. 5-7, 1898.

BY H. HATCH, M.D.

QUINCY, ILL.

The paper I present here contains two merits: 1, its shortness, and 2, a subject that can not be too often brought before surgical bodies, and that is, the saving of injured parts, a subject of great and deep interest to patients suffering from surgical injuries, and also of great importance to every conscientious surgeon. Not a few of us are often confronted with injuries of the upper and lower extremities, where, in order to be sure of the wound healing by first intention, we must remove so much of the injured member that when it is entirely healed it becomes perfectly useless. Injuries such as these we often find as the result of railroad injuries, and we meet them also in planing-mills. Very often by the pulley action upon the distal ends of muscles they are loosened at their insertion, and thereby, if left, in the process of healing they set up a phlegmonous infiltration, or inflammation, in spite of all our precautions.

It should always be the object and aim of the surgeon to leave the injured member in such a condition that when it is healed it will be of some use to the patient in future life. Often the surgeon will find, if he does this, that by taking the chances to save parts that are badly bruised and torn for the sake of their ultimate usefulness, sloughing takes place, and he will be very much blamed; and especially so when some meddlesome neighbor or "kindly physician" in the neighborhood tells the patient's friends and relatives that if the wound had been properly treated no sloughing would occur; but sloughing will occur if dead tissue is left. If there are such kind friends there frequently is no end to the troubles of the surgeon.

The first consideration of a surgeon, when called to a case, should be: How can I operate so that this patient can remain a useful member to his family and society? And especially should his thoughts revert to the family, because most injuries of this kind occur to mechanics and men who depend upon their labor for their daily bread. It is never necessary to think, in making an operation, whether it shall be a McKinzie, a Henry, or a Symes operation, and I never do think of that. I always think: How much can I save of the part to make it useful to the owner? To illustrate the point I have in view in the above remarks, I will give a case that I had not a great while ago, as an illustration:

William F., a carpenter by trade, while working with a machine called a planer, had his left hand cut. This machine has a cylinder upon which are a number of knives that revolve with great velocity. His hand was caught, palmar surface upward, crushing all the phalanges, also one-half of the distal ends of the second, third and fourth metacarpal bones. The end of the first metacarpal bone was also laid bare, and the extensor tendons had all been severely pulled upon. In this case my associate thought it was useless to try to save any portion of the hand. I think most surgeons would have amputated on a line just at the base of the thumb. I did otherwise. I took a flap from the posterior part of the hand and brought it over the bare end of the first metacarpal bone, after first having sawed off the roughened and lacerated ends, directing it in such a way as to have a pointed stump; and in that way have made a very useful hand for him, so that he is able to do almost anything that comes to him in the line of his trade. In order to save the portion of the hand that I saved for him—the end of the first metacarpal bone—I took a great risk with my badly bruised, and very much disorganized flap. As will be readily seen, there is left a bad scar. This was the seat of extensive sloughing on the palmar surface of the hand, but there still remains a fair amount of grasping surface between the thumb and the end of the first metacarpal bone. Without the projecting end of the first metacarpal bone this man's hand would be useless; but had I amputated it higher up I would have saved myself an immense amount of trouble, and have gotten more praise for having my wound heal quickly, and by first intention, but now the patient is glad I took the risk that he might have a useful hand.

More recently I had a case which was simply remarkable in its results—a case of a mechanic, where the first, second and third fingers were crushed to such a condition that I removed a number of small pieces of bone, washed the parts thoroughly with alcohol, bound them up loosely with gauze, and upon each finger put a splint, thinking that, if necessary, amputation could be made; later the fingers all healed and the hand is useful today.

Another case, remarkable as an illustration of conservatism in railroad surgery, is one which I reported in the *International Journal of Surgery* last year—the case of a fireman, where there was a compound comminuted fracture of the femur of the right leg with rupture of the quadriceps extensor muscle, foot of the same leg crushed, and fracture of the left leg above the ankle. It would seem as though it would have been impossible to save this man's right leg, but he is well today and firing his engine as usual. In the Army and Navy Surgical Medical Museum at Washington, on the second floor of one of the departments of the museum, there are a number of specimens in plaster, illustrating cases very similar to the ones I have just referred to.

To illustrate the latter still further, I give another case, a gentleman, where I took a great deal of chance in saving the index finger. It was an instance where the man, in operating what is called a band saw, had the entire outer aspect of his hand caught, the saw passing through the fifth, fourth, and third metacarpal bones near their distal extremities, then passing a little forward and entering the base of the first phalange of the index finger. It looked a hopeless task to save this finger; but by great care in stitching the wound together, after first amputating enough of the distal extremities of the metacarpal bones of the outer portion of the hand, I was able to save this finger, and also to make it a useful member. I might multiply these two cases by a number of others that have recently come to my mind, where it became necessary to take risks in order to make useful parts.

And now, one word as to dressings. In these bad cases, where the tissues are badly lacerated and torn, I find nothing better to my mind than to moisten dressings with an antiseptic solution; and the choice of that antiseptic can be left to the well-informed surgeon, but I want to say that for the first washing after an amputation and before the wound is closed, there is nothing better than pure alcohol. Since I have been using alcohol freely in washing out wounds I have had much better results than formerly.

SOCIETY PROCEEDINGS.

Chicago Medical Society.

Regular Meeting, March 1, 1899.

Dr. A. D. BEVAN, the president of the society, occupied the chair. He announced the subject for discussion as

SYPHILIS.

Dr. MAXIMILIAN HERZOG read a paper entitled

REMARKS ON THE HISTOPATHOLOGY OF SYPHILIS.

From the histologic picture of syphilitic lesions he is inclined to draw the following conclusions:

1. What has been long known from clinical observation, viz., that syphilis primarily infects the lymphatic system and spreads by the lymphatics is true.

2. The infection of the blood-vessels occurs from the perivascular lymph-spaces. The veins are less resistant, and consequently, show the most marked changes, while the arteries, certainly in the earlier lesions, are not so prominently affected as the veins.

3. The specific living syphilitic poison is originally and probably permanently located in the lymphatic system, wherefrom it invades the blood-vessels and leads to the appearance of general manifestation. After such a general outbreak there is established, either in consequence of, or independent from, an antiluetic treatment, a hematogenous immunity. This latter, however, lasts only a limited period of time, when a new invasion of blood-vessels from lymphatic foci may take place. Whether a final complete hematogenous and histogenous immunity may be established with the proper treatment or without it, is a question which will undoubtedly be touched upon by these clinicians who are to follow in the discussion of the subject.

Dr. DAVID LIEBERTHAL followed with a contribution on

PRIMARY AND SECONDARY SYPHILIS.

He discussed the primary lesion with reference to its absence, its multiplicity and its recurrence. Can physicians under any circumstances admit or claim the absence of change at the portal of invasion of the syphilitic virus? He thinks they can, but only in cases of hereditary or of congenital syphilis. In all other cases it must be seriously doubted, since the primary lesion may be so minute as to escape detection by the naked eye, or it may lie in such an inaccessible or unsuspected place that it may escape observation.

As regards the multiplicity of primary lesions, by the time one lesion has developed, the whole system has become inundated by the virus, so that the contact of this lesion with vulnerable parts of the same person is without effect, therefore the one primary lesion remains single. But multiplicity of primary lesions may occur if there are more accessible portals than one, and if these come in contact with the virus simultaneously. No immunity of the body has yet been established, and simultaneous infection of different points is possible. Reinduration of the seat of primary lesion must be looked upon as a local or part of a general relapse.

Syphilis without surface eruption at the usual time is not such an uncommon occurrence. Fournier, one of the most reliable observers, states that the eruptions are absent in 40 per cent. of female patients. In these the primary lesions are in evidence, and the general lymphadenitis is present. It is known that such cases should not always be classed as mild, since serious symptoms may occur at a later period. That secondary cutaneous eruptions may be entirely absent is quite possible, although they may be so slight as to be overlooked.

Dr. Lieberthal then referred to grave cases of secondary syphilis of the non galloping variety, in which the cutaneous changes consist of ulcer spread either over limited areas or over the entire surface. Of the former, the lower extremities are the regions most frequently affected. These ulcers develop from syphilitic papules. They are accompanied by slight febrile reaction, slight mucous affection, and somtimes periostitis or iritis, but in any case by no more alarming symptoms than the usual cases of secondary syphilis. They readily yield to treatment, and the term "grave" is only applicable to the skin changes. Considering, therefore, that the primary lesion may be apparently absent and the early secondary eruption so slight as to pass unnoticed, a slight soreness of the throat being the most prominent symptom, the story of the patient, with reference to his never having been the subject of syphilis, must be accepted with the greatest reserve. In many cases there will be an obscure etiology, with affections ranging from the scalp to the toes, not to mention the invasion of the nervous system, syphilis being the remote cause. It is wise to bear this in mind and to proceed accordingly, and if not in all, yet in many of these cases the institution of specific treatment will be attended with definite results.

Dr. HENRY G. ANTHONY read a paper on

GUMMATA AND CHANCRE REDUX

He said that there are no cutaneous manifestations of syphilis which are more frequently wrongly diagnosed than are the tertiary cases, in which there is no history of primary or secondary disease. Fournier gave the name of "ignored syphilis" to this class of cases. They are very common, and can only be diagnosed by a study of the appearance of the lesion regardless of the history. Any of the late syphilides may be present in these cases; those which ulcerate, however, are more frequently misinterpreted than are those which do not ulcerate. Dr. Anthony then restricted himself to a consideration of but one of these lesions—the gumma.

Whenever any part of the body of a syphilitic is injured, the disease often develops at the seat of injury. This is especially true of gummata, and when this occurs, and there is no history of previous syphilitic disease, such lesions are very frequently not diagnosed, even when absolutely typic in appearance; or to express this idea more concisely, syphilis is a disease which frequently develops in the *locus minoris resistentiæ*.

The author briefly outlined a few cases selected from a large number, to illustrate this subject, one of which we cite:

A man presented himself at his clinic with an ulcer on the middle portion of the anterior aspect of the leg. This ulcer was four inches long and two inches wide. It was surrounded by an extensive exudate, which elevated the tissues and gave the ulcer a depth of one inch. The outline was regular. It was funnel shaped; the sides were smooth; the base was formed by denuded bone the size of a silver dollar. Diagnosis from appearance, probable ulcerating gumma. On further examination no scars could be found anywhere on the integument or mucous membrane of the mouth. However, on the first phalanx of one finger a typic syphilitic dactylitis was discovered, which made the diagnosis certain. The following history of the case was obtained: The patient was 40 years of age; had been married a number of years; his wife had five children, no miscarriages; neither his wife, children, nor he himself had ever had symptoms in any way resembling syphilis. He had never had a venereal disease. Three months before, while wheeling a baggage truck, he slipped; the iron leg of the truck struck him on the shin: a swelling resulted, which his attending physician diagnosed as an abscess. A free incision was made, and the wound antiseptically dressed for three months. Finally, bone could be seen in the bottom of the wound. This, his doctor stated, should be removed. The patient visited Dr. Anthony's clinic to ascertain if the wound could not be healed without operation. Under mixed treatment both the gumma and the dactylitis, which had existed much longer than the gumma, healed quickly. Similar cases were cited.

The essayist then dwelt at length upon chancre redux, saying that the reinfection of syphilis has long been a subject of discussion among syphilographers. At the present time Hutchinson and his followers believe that it is not extremely uncommon, and that there are at least fifty-two cases on record; while, on the other hand, the French school—Taylor and others—believe that there are but five authentic cases on record, and to explain the remaining cases they state that most of them are cases of reinduration of old chancres, which is called chancre redux, pseudo syphilitic chancre, and relapsing chancre, and was first described by Fournier in 1868.

The first really important paper questioning the correctness of Fournier's view was from Leloir, in 1885, who stated that in his opinion the chancre redux was identic with trivial affections, such as herpes or balanitis, which take on induration in old syphilitics, and that in both these lesions the induration precedes the ulceration, while in the chancre the ulcer precedes the induration; that these lesions were gummata and

should be called *chancriform syphilomes*. This view was not adopted by his associates of the French school, and at the time it did not attract the attention of others because it was published as a thesis to which few had access. Brocq also has written some very able papers on this subject, maintaining a similar view.

Dr. Anthony believes that all cases of reinfection of syphilis and of chancre redux which may be reported hereafter should be accompanied by a microscopic examination of the chancre. Of all authorities with whose writings he is familiar there is no one who seems to him to have had as clear an idea of this subject during all these years as has Kaposi. In his text book he does not mention the chancre redux, but in considering the eruptions of the genital organs, he says: "Papular eruptions and gummata occurring on the genital organs may present great difficulties in diagnosis, inasmuch as they may readily be mistaken for chancres, or they may produce the symptom complex of reinfection, and this is especially true of gummatous infiltrations of the corpus cavernosum penis." To the above statement, Dr. Anthony added, "and these remarks apply equally well to relapsing chancres."

Dr. L. BLAKE BALDWIN spoke on the subject of

EXTRAGENITAL CHANCRE.

A number of such cases have come under his observation, occurring in all walks of life, being located on almost every part of the body, and in some cases the initial lesion either passed unnoticed or was incorrectly diagnosed. Physicians hardly realize the danger of infection when examining patients, or are cognizant of the number of practitioners that suffer from syphilis contracted in this way. Among 47 cases of extragenital chancres reported by Fournier, 30 were physicians and midwives. The essayist could cite many cases in Chicago among physicians who have contracted syphilis in making examinations, in doing minor and major operations in obstetric practice, in holding postmortem examinations, making dissections, etc. A case in point: A physician in examining a woman for an ulcerative condition of the labia decided that an operation was advisable, and dissected out the abscess. He found a stitch would be necessary to close the wound, and after tying, cut the stitch with the bistoury he had used; the bistoury slipped and cut his finger. He immediately washed it with 1-500 bichlorid, and put on a collodion dressing. Three weeks after the operation he noticed an ulceration at this point which proved to be a chancre. Glandular involvement and secondary symptoms followed. He was unable to attend to his practice for several months. To emphasize still further the danger physicians are exposed to, he mentioned another case that presented many points of interest.

There is no portion of the skin or mucous membrane which is exempt from local syphilitic infection when there is a solution of continuity of surface. The favorite seat of extragenital chancre is upon some portion of the skin or mucous membrane of the head. Thus Fournier reports that of 481 cases of extragenital chancres, 365, or 75.8 per cent., occurred in this region. In adults it is chiefly due to the practice of kissing, the indiscriminate use of drinking utensils, pipes, etc.; in infants to infected wet-nurses, the latter being a cause which should receive the serious attention of every practitioner.

Gaston R. Aulnay reports 370 cases of chancres of the breast. Dr. Baldwin has seen several such cases, one of which he reported as follows: A baby, 4 months old, was brought to his clinic by its sister. On examination, he found a secondary eruption, enlarged lingual gland, and a true chancre on the left side of the lower lip. He sent for the mother. In examining her he found a fast disappearing ulceration under the left nipple. The history she gave was that the flow of milk was very slow, and her husband had used his mouth on her breast to "hurry up the milk," and the sore appeared a month afterward. Here is an instance of a father infecting the mother's breast, and the breast in turn infecting the baby. During one of the examinations the sister leaned over and kissed the child to quiet it. He explained to her the danger of infection, but four months afterward she presented a chancre on her upper lip.

The chief interest in the subject of extragenital chancre lies not in the report of individual cases, but ratner in the deductions to be drawn from them as an explanation of the mode and site of infection in the multitude of cases of late syphilitic manifestations in which no history of infection can be obtained.

Dr. HUGH T. PATRICK followed with a contribution entitled

SEVEN ONE MINUTE POINTS ON SYPHILIS OF THE NERVOUS SYSTEM.

1. Syphilis of the nervous system very rarely means syphilis of the nervous tissue. With but few exceptions it means syphilis of the vessels or of the membranes, or of both—categorically, syphilitic arteritis, syphilitic meningitis or gumma, the first being incomparably the most frequent, the last (gumma) the rarest, and the second being practically a combination of the other two. In most instances the symptoms are due only indirectly to these specific lesions.

2. The custom of speaking of nervous syphilis as tertiary is condemnable, as it tends to promote clinical cloudiness in the mind of the practitioner by conveying the impression that these lesions must occur at a remote period after infection. The nervous system may be attacked before the disappearance of the primary sore, the appearance of lesions of the system within a few months after infection is frequent, and more cases occur within the first year after chancre than in any other; 50 per cent. come in the first three years, over 60 per cent. in the first five years, and after ten years of quiescence syphilis of the nervous system is exceptional.

3. In the case of a woman, a negative history of specific infection is valueless, and in men it is worth but little more. On the other hand, a positive history is of the greatest possible importance, and it is well to bear in mind that syphilis is no respecter of persons, and that the disease may be contracted by any individual regardless of guilt, knowledge or previous condition of purity.

4. In the present state of our knowledge we are not justified in regarding locomotor ataxia, general paralysis of the insane, and ordinary arteriosclerosis as syphilis of the nervous system, although the paramount importance of syphilis in the causation of the first two affections, and possibly of the third, can not be gainsaid.

5. There is current in the profession a rather illy defined, but unmistakable impression that syphilis of the nervous system is nearly always a curable malady. The best of treatment will not always remove an incipient syphilitic arteritis, meningitis or gumma; it can never perfectly cure any one of these lesions when far advanced.

6. To treat syphilis of the nervous system with ten grains of iodid of potassium and one-thirtieth grain of biniodid of mercury, three times a day, is to show a lamentable ignorance of therapeutics, and might be compared to attacking a holocaust with a garden syringe. For the treatment of nerve syphilis there is just one special rule: give mercury and give iodid, and give enough of each.

7. What is "enough" of mercury and iodid? At first, mercury to touch the gums while the mouth is kept immaculate, and continuance of a dose just short of this, usually 120 grains of potassium iodid t. i. d. Sometimes 60 grains suffice; sometimes 120 are not enough. The question will at once arise: How may patients tolerate this dose? Give it always diluted in at least eight ounces of water, and after meals. Occasionally it will be necessary to give it in a pint of water, one-half to be taken immediately after eating, and the remainder an hour later. Given in this way, Dr. Patrick has only had one patient in more than four years who could not take as much iodid as he wished to give, and in syphilis or suspected syphilis of the nervous system he has never given less than three drams a day, generally six, sometimes more. He has never seen the utility of beginning with five grains and wasting three or four weeks of valuable time in working up to a full dose. To begin at once with 30 or 40 grains is just as easy and much more rational.

Dr. RALPH E. CAMPBELL discussed

THE TREATMENT OF SYPHILIS.

The time to institute antisyphilitic treatment is a very important and yet a mooted question, but he does not believe that under ordinary circumstances any beneficial results have ever been obtained from the administration of mercury in the initial stage. As it is impossible to abort the disease, such procedure only delays the many subsequent symptoms upon which physicians are utterly dependent for a positive and intelligent diagnosis, and this period is reached when the secondary eruption appears. The period of incubation is not to be lost sight of, but to be devoted to placing the patient in such condition physically that he will receive the full benefit of antisyphilitic treatment.

Many years of experience have shown that mercury has the most marked and salutary effect in the treatment and cure of syphilis, and, if properly handled, it may also be termed a specific for that disease. In no department of medicine have more advances been made and more enlightened conservatism been engrafted than in the treatment of syphilis by mercury. The treatment of syphilis must be based upon a full and accurate knowledge of the disease. In the early secondary stages the author uses protoiodid of mercury sometimes, combined with citrate of iron and quinin, or taka-diastase, the dose rang-

ing from 1 to 4 grains a day, or mercury tannate from 1½ to 3 grains a day, or mercury and chalk in gradually increasing doses. In case the results from giving mercury by the mouth are not satisfactory, the physician should resort to hypodermic injections, fumigations, or inunctions.

Late secondary and tertiary lesions of the skin and mucous membrane, affections of the bones, joints and periosteum, late appearing affections of the eye, ear, cerebrospinal system and the viscera, the testes and the penis require a combination of mercury and postassium iodid or the mixed treatment.

The most common manner of giving mercury is by stomach injections, but the physician must be watchful lest enteritis, either mild or severe, supervene. This may pass away in a few days, as the patient becomes accustomed to the action of the drug or may grow more severe and lasting. In order to avoid this condition strict attention must be paid to the diet. In using inunctions the patient should be instructed to first take a bath at 100 F., and then sponge himself with a 2 per cent. solution of carbolic acid to render the skin aseptic. The inunction method was dwelt upon at length. The author has not obtained satisfactory results with the plaster mull treatment of Unna, or the friction soap treatment of Schuster. Fumigation treatment is useful in many cases and conditions, but is not to be followed as a routine plan. Thyroid treatment and blood serum therapy are, in the opinion of the essayist, useless. Hypodermic injections have their advantages, such as cleanliness, exact dosage, certainty of application, secret treatment in families, forced medication of prostitutes, sure action, better absorption and consequently more rapid effect. The disadvantages are stomatitis, gastro-intestinal disturbances, nervous phenomena, infiltration, fistulæ, abscess at the site of injection, pain and embolism.

The site of injection is, for insoluble salts, intramuscular or subaponeurotic in the deltoid, interscapular or subscapular regions, or buttocks. The latter is the spot most commonly used. The soluble salts are used by intravenous, subcutaneous, intramuscular, or subconjunctival injections. Injections of soluble salts may be made every day or every other day up to forty or fifty; insoluble salts, eight to ten injections, at intervals of from one to three weeks. In the treatment of syphilis it must be remembered that the most minute syphilitic lesions are to be feared, for the morbid cells herein contained are capable of infinite multiplication, and so-called syphilitic relapses are due to the continual recurrence of these cell proliferations.

Denver and Arapahoe Medical Society.

Regular Meeting, Feb. 28, 1899.

Dr. H. G. WETHERILL presented a paper to the society on

THE RELATIONS OF CERTAIN NEUROSES TO THE PELVIC AND GENITAL DISEASES OF WOMEN.

He said: Those who have observed the evolution of modern gynecology are not unmindful of the constant tendency to more rational and sound gynecologic teaching and practice, and no single occurrence of the past decade indicates the trend of thought more clearly than the symposium upon the relation of pelvic to nervous diseases at the Denver meeting of the AMERICAN MEDICAL ASSOCIATION.

The main points upon which practically all could agree were: 1. A patient may have at one and the same time both pelvic and nervous diseases, absolutely independent of each other, so far as the production of one by the other is concerned. 2. Pelvic diseases and lacerations of the soft parts may exist for years without marked symptoms, till some other physical conditions arise to bring them into notice and develop them as factors of the case. Though this be true, the existence and perpetuity of these pathologic pelvic conditions, when once they have become prominent symptomatically, is a bar to the cure of nervous symptoms and the restoration of the patient to good health. 4. Pelvic and other operations upon the genitals of women must in every instance be done for existing disease of these organs and never for reflex symptoms. 5. When disease of the genitals exists, or laceration of the soft parts in which more or less complete cicatrization has occurred, there may be present profound reflex disturbances which can only be regarded as a phase or expression of the genital malady. 6. The cure of these complicated cases presenting both nervous and genital diseases of the concurrent and interdependent type will ordinarily demand that all possible causes of reflex disturbance be eliminated primarily and previous to the institution of systematic treatment for the nervous condition. 7. To this end in such cases the neurologist and gynecologist must co-operate, combining their efforts to master what sometimes proves to be a most intractable group of symptoms, comprising those of the tangible genital lesions and the intangible, elusive and almost incomprehensible manifestations of neurasthenia, hysteria and even some forms of insanity. The third, fifth and sixth of the conclusions were not concurred in by all those taking part in the discussion, and one or two of the neurologists took decidedly opposite grounds, still the greater number of those participating in the symposium were disposed to endorse them.

May our patients present various reflex nervous disturbances more or less general in character which are associated with and dependent upon, in the relation of cause and effect, pathologic pelvic or genital conditions? May such pathologic conditions, when once they have become prominent symptomatically, be a bar to the cure of the reflected or referred nervous symptoms or disease? In the treatment of such cases should the pelvic lesions be eliminated as a factor before the systematic treatment of the nervous disease is undertaken? The solution of these questions can not be reached by the acceptance of the mere *ipse dixit*, but must be evolved from the knowledge, experience, experiments and research, and it would appear that we have given too much consideration and weight to the empiric evidence offered, and too little thought and consideration to the known facts as they are given us by the anatomist, physiologist and pathologist. The exhaustive and laborious papers of Henry Head, "On Disturbances of Sensation, with Especial Reference to Visceral Disease" (*Brain*, Vol. xvi, 1893; and Vol. xvii, 1894), and James Mackenzie, "Some Points Bearing on the Association of Sensory Disorders and Visceral Disease" (*Brain*, Vol. xvi, 1893), bear with particular force upon this matter. An outline of these papers with some allusion to the argument can help us to a better understanding of the problems now before us for consideration.

Head and Mackenzie are agreed that "The pain of visceral diseases is not always localized by the patient over the organ affected." Ross first explained this fact by an ingenious hypothesis that the pain of visceral disease was referred along the distribution of the somatic roots which come off from the same level of the cord as the sympathetic fibers of the organ affected. They agree that: 1. The pain of which the person complains always lies within the areas of tenderness, if these be present. Should they be present at one time and absent at another, but the pain remain, tenderness is always found to make its appearance in the area which is said to be painful. 2. The tenderness is not deep-seated, but is always cutaneous or subcutaneous. 3. These areas of tenderness bear a definite relation to the different organs affected, but in many cases lie at a considerable distance from the organ affected. The pain produced by stimulation is not produced by any action on the organ itself, which may lie at a considerable distance from the tender spot. Again, the tenderness may be on the right side, though the organ affected lies on the left side of the body. 4. The superficial reflexes are usually exaggerated over the tender areas produced by visceral disease." (Head: *Brain*, Vol. xvi, 1893, pp. 55 and 56, and James Mackenzie: *Brain*, Vol. vi, 1893, p. 331.)

Illustrative examples are given of this referred pain of visceral diseases, such as the well-known arm pain of angina pectoris, the right shoulder pain of certain diseases of the liver and diaphragm, the referred pain and retracted testicle of renal and ureteral calculus, the back pain of prostatic and rectal diseases, the retention of urine after painful rectal operations, and last, but by no means least for the purposes of this paper, the well-known pains in groins and back and hips and thighs, under the breasts and on the head; from ovarian, tubal and uterine diseases.

In regard to the generalization of pain, tenderness and other nervous phenomena originating from visceral disease, it is made apparent that this may take place through one or all of three ways: 1. An organ receiving most of its nerve-fibers from one side of the cord, nevertheless has some from the other side, so that visceral disease may be the cause of pain or tenderness at the same spinal level on the side of the body opposite that upon which the viscus is situated. 2. Through diffusion from a center, as in the neuralgias set up from an aching tooth but spread into the areas adjacent. "If I am anemic, or if the pain remains untreated until my bodily health is affected, I no longer have a localized area of tenderness, but the pain, and with it the tenderness, spreads until the whole of one half of the head and even the neck may be intensely tender. Thus, at last, the pain of an aching tooth has produced tenderness over areas which bear no relation to the affected organ. 3. Certain viscera, such as the uterus and breast, are naturally closely related to one another. Thus, suppose pain and tenderness to exist in consequence of the disease of one of these organs, the next area that will be affected when this pain and tenderness spreads, is that belonging to the associated organ.

. . . This is the phenomenon which I have been accustomed to call 'generalization of visceral pain and tenderness,' and is of such common occurrence as to form a very important factor in the clinical picture of many diseases. A patient may be anemic and yet suffer from no pain or tenderness. But as soon as some cause for referred pain is present generalization at once begins. Thus if an anemic female menstruates she not only has pain over the tenth dorsal areas corresponding to the ovary, but she has pain and tenderness over the areas of the sixth dorsal (heart), seventh dorsal (stomach), occipital and midorbital (eyes, etc.). If an anemic man or woman have a toothache or suffer from hypermetropia they may have the most widespread tenderness and pain. And yet if the cause is removed this pain does not cease, at any rate immediately, for the resistance of the center being once broken down is with difficulty recovered."

"Where widespread tenderness of the head and neck are present, and headache is a marked feature, some error of refraction is often present. In some cases the starting-point of the pain is in the cough of some lung or bronchial affection. A very large number start originally in the pain of chronic dyspepsia, and an even larger number in the pain caused by some irregularity in the viscera. Thus it is not sufficient simply to treat the anemia or to treat the original cause and point of primary manifestation of pain, *but both must be corrected.*"

This logic view of the phenomena under consideration, confirmed by the observation and experiments of Head, Mackenzie and Ross, would seem to be indisputable, and the failure of surgery to cure under certain conditions is fully explained. It is evident that the part played by the reduced resistance in the nerve centers from long existing visceral disease, and the rational treatment of this condition subsequent to operation, have not sufficiently attracted our attention. We have expected too much from the elimination of the peripheral irritation which has determined the generalized symptoms, and have failed to appreciate the necessity for patient and persevering, and sometimes long continued after-treatment of a character likely to restore the tone and resisting power of the general nervous system.

The evolution of the present views as to the efficacy of the surgical treatment of traumatic epilepsy may be cited as an illustration, for it is now conceded that late trephining and elevation of an old depressed fracture of the skull is quite likely to fail of itself to cure the resultant epilepsy after the epileptic habit has been established, although an early operation might have prevented the epilepsy. The results of modern surgery have been so wonderful, and its application so varied, that too much is often expected as the direct and sole result of the surgical operation; the swing of the pendulum is bringing opinions and practice to a much more rational and sound basis.

In the discussion to which allusion has been made a well-known neurologist of Philadelphia took the most radical position against the interdependence of pelvic and nervous diseases, as well as that against the performance of surgical operations in the treatment of such nervous diseases as neurasthenia and hysteria. He said, for instance: "We remember that in neurasthenia there is added to nervous weakness, nervous irritability; that there is an increased reaction to local impressions, and I maintain that it is just as proper and just as clearly indicated to correct local pelvic disease in neurasthenic patients as it is to give such patients glasses to relieve their ocular symptoms." On the other hand, he concludes, among other things, that "There is no relation between pelvic disease and hysteria (and neurasthenia) even when the two affections co-exist in the same case" and "that the pain areas of hysteria bear no relation to disease of the deeper structures."

It is evident that agreement is near when the most conservative neurologists "believe that in neurasthenia, operations for actual pelvic lesions are indicated" and gynecologists proclaim that "pelvic and other operations upon the genitals of women must in every instance be done for the existing disease or distortion of these organs, and never for reflex symptoms which may be supposed to originate from healthy and normal organs."

Every gynecologist of wide experience knows, and most of them will admit, that surgical operations for the cure of reflex pains believed to be of genital origin, very often fail of their purpose. Occasionally this is true even when gross disease of the pelvic viscera has been demonstrated and eradicated.

It is evident that at times surgery does not go far enough, that it is not complete and finished in detail; or that the post-operative treatment has been inadequate. It is not enough in seeking the source of a neurosis of pelvic origin to exclude disease of the ovary underlying the point of referred pain, nor is the most necessary surgery, however rationally and deftly done, all that is required to effect a cure. The conclusions of MacKenzie and Head are clear upon this point, and in the light of their findings it must be borne in mind that pain upon one side may have its origin in the ovary of the other side or in any viscus receiving its sympathetic nerve-supply from the same segment of the cord, or one intimately associated with it. In the search for the causes of such pain all the pelvic viscera must be examined and disease of all removed or excluded, and the operation must be so completed as to leave no pathologic conditions as a result of the work; i. e., no dead ligatures or extensive adhesions. More important than all, the after-treatment must be so conducted as to eliminate the acquired pain habit, just as the epileptic habit should be treated after trephining.

It is apparent that we must answer in the affirmative two of the three questions asked in the first part of this paper, as the affirmative answer is practically conceded by all parties. There yet remains for consideration the query whether, in the treatment of such cases, the pelvic lesion should always be eliminated as a factor before the systematic treatment of the nervous disease is undertaken. It would seem at a first glance that the affirmative answers to the other phases of the problem carried with them the affirmative answer to this one, were it not so well known that the clinical histories of multitudes of just such cases not only fail to support such an answer but, on the other hand, point to the very opposite one. No possible ground exists for the view that the pelvic operation should always be done as a preliminary to other treatment, for such generalization is particularly unwarrantable here, each case being a law unto itself and demanding a most careful investigation of all its phases. Some cases will demand immediate operation, some a more or less prolonged course of preparatory treatment before operation, some postponement of all operative procedures till practical cure of the nervous symptoms is secured and others must not be operated upon at all, even for evident pelvic lesions, unless the operation is imperatively demanded as a means of preventing impending death from some acute, virulent or malignant disease.

Broadly speaking an experience of twenty years leads me to think that those cases in which we most certainly hope for and expect great improvement in nervous symptoms associated with female genital lesions are such as have neurasthenia, together with lacerations of the soft parts, accompanied by retrodisplaced or prolapsed pelvic organs. Wise and properly done surgery, followed by judicious after-treatment almost invariably gives the most satisfactory results in such instances, and this experience is confirmatory of another; i.e., that women who have borne children are much more certain of a surgical cure of reflex nervous symptoms than are those who have not, be they married or single.

The cases most unfavorable for the surgical cure of reflex nervous symptoms, even when actual pelvic lesions exist and are believed to have been a factor in their production, are those hysteric unmarried women who have no reserve of nervous energy; who seem to be greatly improved immediately after operations, which they bear particularly well and even appear to enjoy, but who soon relapse and are again as ill or worse than ever before, regardless of what may have been done for them, or of how well it may have been done. Sexual perverts, masturbators and conception-preventers are the very worst of this class, and when the pain habit or the hysteric state in such individuals has become thoroughly established, it may be looked upon as well nigh incurable, at least by surgical means alone. Every neurologist and every gynecologist of experience can recall many such cases. They have had repeated pelvic, plastic, and kidney fixing operations, operations for ventral hernias, dead ligatures, peritoneal adhesions, etc., until more or less complete evisceration precludes the possibility of further surgery; when they are left to drag out a wretched existence, having gone steadily on from bad to worse with each new procedure.

All gynecologists, neurologists, and physicians, all medical students, and a few patients, should read at least once a year that classic introduction to "The Clinical Gynecology" of Keating and Coe, by Dr. William Goodell. The closing paragraph of this remarkable paper should be ever before us. He says:

"In conclusion, the riper my experience the more firmly am I convinced that in the treatment of women's diseases the possibility of a nerve origin or of a nerve complication should be the *fore*-thought and not the *hind*-thought of the physician. I therefore have arrived at a very short gynecologic creed: I believe that the physician who recognizes the complexity of woman's nervous organization and appreciates its tyranny will touch her well-being at more points, and with a keener perception of its wants, than the one who holds the opinion that woman is woman because she has a womb."

In bringing this paper to a close allow me to recapitulate the inferences I have made:

1. Nervous symptoms or actual disease of the nervous system may be produced in a reflex way from the pelvic or genital diseases of man or woman.

2. Reflected or referred pain, usually neuralgic in type, may also be so produced.

3. The referred pains are not always produced by a disease of the organ which they overlie, but they may be due to disease of some organ having its sympathetic nerve-supply from the same segment of the spinal cord, or even due to a disease of some allied organ elsewhere in the body. Thus the so-called ovarian pain may be produced from a disease of the opposite ovary or other pelvic viscera; it may be caused by other pelvic conditions induced through sexual perversion, though they may be accompanied by no gross lesions, and I believe the last-mentioned cause is a common one in the etiology of ovarian pain, inframammary tenderness and the neurasthenia and hysteria with which they are so often accompanied. Pelvic and general hyperemia and hyperesthesia are usually found in conjunction with the other phases of this malady, and the flushing face and other evidences of vasomotor disturbances at least suggest a genital origin.

4. Pelvic and genital diseases—organic and functional—must, whenever possible, be cured as a part of the scheme of rational treatment of those patients presenting the nervous manifestations of such lesions.

5. Timely and judicious surgical work will, in selected cases, do much to cure the nervous symptoms arising from actual pelvic disease or dyscrasia. A late operation may fail, as in epilepsy, and it is only those cases that have been selected with great care that should be operated on at all.

6. Chronic hysteric patients with an established pain habit are the least likely to be permanently benefited by surgical operations, and operations must be done upon such individuals only after a careful consideration and consultation with the neurologist, and only for evident and palpable local disease, the cure or relief of which is believed to be positively essential to the health and well-being of the patient.

7. The surgical treatment of pelvic inflammation or infection, subinvolution, uterine displacements, or prolapse of the pelvic viscera, and the old lacerations accompanying them in child-bearing women is most promising and satisfactory when a cure of their nervous sequels is sought. Such cases yield the best results attainable, both local and general, immediate and remote.

8. The elimination of the peripheral cause is but one step in treatment; the effect remains to be treated and must be intelligently and persistently treated until cured, if indeed cure is yet possible. Surgery may remove the cause, but surgery alone is in many instances inadequate for the cure of the effect.

9. The local and original cause can only be cured by treatment prescribed for and directed to the local disease. This treatment must often be surgical.

10. Rest, massage, electricity, hypernutrition, moral suasion and suggestion are inadequate for the cure of the local cause, as in surgery, for the cure of the effect. It is quite as reasonable to expect, then, to cure an abscess or tumor of the brain and their symptoms, as to expect to cure the lesions and symptoms of like pathologic processes of the pelvis.

Dr. ESKRIDGE said that neurasthenia and hysteria lie too deep to be reached by the scalpel. He pointed out that a lesion in a healthy subject will never give rise to such an array of symptoms as one is liable to meet in hysteric and neurasthenic subjects. He spoke of the importance of and benefit to all concerned of the co-operation of the gynecologist and neurologist. He refuses to treat cases in which the symptoms point to some derangement of genito-urinary apparatus before the gynecologist has given his opinion. In nine cases out of ten the local trouble should be treated first, or both should be treated at the same time. The specialist should try to serve as a consultant only; the treatment should remain in the hands of the practitioner.

Dr. PERSHING spoke of the many factors which are contributing to the etiology of neurasthenia and hysteria, and which must not be overlooked—overwork, worry, uric acid diathesis, peripheral irritation, etc. The abnormal suggestibility and lack of self-control of such patients should be overcome. His studies during the last year have convinced him of the error of the stand he took some time ago that pelvic disease does not cause headache. He still adheres, however, to his opinion that diseases of the uterus do not cause headache.

Dr. PERKINS expressed his assent to all the deductions made by Dr. Wetherill, and cited a few illustrative cases.

Dr. SEWALL objected to Head's conclusions. Cutaneous pains in certain parts do not necessarily signify visceral lesions, and vice versa. Ductless glands have internal secretions. In morbid states of such glands lack of secretion may cause headache without any nervous connection.

Dr. WETHERILL, in his concluding remarks, related cases of epilepsy in an English asylum, 50 per cent. of which had phimosis. The speaker was on the Board of the New Jersey State Insane Asylum, and found 36 per cent. with phimosis. Circumcision gave several good results. He cited the splendid work done in the Ontario Asylum for the Insane, where 110 women have undergone operative treatment. The operations embraced 83 curettages, 38 trachelorrhaphies and amputations of the cervix, 26 operations for suspension of the uterus, 12 ovariotomies, 17 hysterectomies, 2 laparotomies for tubercular peritonitis, 1 celiotomy, and 17 perineorrhaphies. The results were as follows: 40 (36 per cent.) were restored mentally, 32 (29 per cent.) showed an improved mental status, while in 35 (29 per cent.) the mental condition remained stationary, and 3, or less than 3 per cent., died.

The whole question depends upon whether we believe that nervous diseases may originate from a pelvic and genital source, and all medical history, experience, experiment, theory and reasoning indicate that they may, and, as a matter of fact, very commonly do so originate, not only in women but in men. To dispute this is to ignore the cyclic nervous phenomena of menstruation, the reflexes of pregnancy, the altered nutrition and nervous disturbances of puberty and the menopause, and the profound effects of sexual perversions and excesses as we commonly see them expressed in and through the nervous system.

Dr. HALL exhibited a spleen from a case of leukemia, weighing 18 pounds.

Chicago Academy of Medicine.

Regular Meeting, Feb. 10, 1899.

Dr. CHARLES S. BACON acted as chairman. He announced the subject for discussion as

NEPHRITIS.

The subject was considered from various specialistic standpoints.

Dr. R. B. PREBLE was called upon to open the discussion. He said: I feel that an apology is needed to appear before you and discuss, at the request of the secretary, so broad a subject as the pathology of nephritis, without having an opportunity to prepare myself, or even to outline what I wish to say.

The pathology of nephritis is a subject with which pathologists and physicians are still struggling. There have been a number of pathologic and clinical classifications advanced, yet there is today no harmony between them, the clinical classification in no degree corresponding with the pathologic. The reason this confusion exists is because both pathologists and clinicians draw too sharp lines, forgetting that the kidney is not an organ in which the parenchyma and the interstitial tissue are sharply separated from each other. Nephritis is usually divided into the parenchymatous and interstitial. As a matter of fact, kidneys examined microscopically rarely, if ever, show either form pure. Frequently the interstitial or parenchymatous changes are found widely in excess, but on the other hand, there are many cases in which we find both elements markedly and evenly distributed, when, strictly speaking, we have neither the parenchymatous nor interstitial form. It would be well for us to follow the example of French physicians in regard to their classification of cirrhosis of the liver; they do not draw such sharp lines between the vascular cirrhosis and biliary cirrhosis, but recognize the fact that in a large number of cases it is neither one form nor the other, but that the cases are mixed. Were we to adopt such a classification for nephritis, considering most of the cases mixed, while recognizing the possible existence of parenchymatous or interstitial nephritis, I believe clinical experience would fit the pathologic conditions. It is rare, clinically, that we find what is described in text-books as parenchymatous nephritis. It is not quite so rare, however, to find what is classified as interstitial nephritis. Most of the cases we see clinically present manifestations characteristic of both forms. We should adopt as our classification parenchymatous nephritis, interstitial nephritis, and consider the bulk of the cases mixed. The examples of interstitial nephritis or of contracted kidney which we see, might be subdivided into primary contracted kidney and secondary contracted kidney. A distinction is to be made by the clinical history, secondary contracted kidney being those cases in which earlier in life there have been symptoms of parenchymatous nephritis.

Turning now from this very brief and general discussion of the pathology of nephritis, let us briefly consider some of the

more prominent constitutional disturbances. I have jotted down only two: 1, the cardiovascular changes; 2, the symptoms of uremia.

Many years ago, when Bright first described nephritis and recognized the relation between ascites, edema, and kidney disease, he noted that in many cases there were present cardiovascular changes for which he could not account. Over one-half of the cases presented evidences of cardiac hypertrophy. In a certain number of these he found valvular changes or changes in the aorta; but in one fourth of the cases he could find no changes whatsoever which would account for such cardiac hypertrophy. He was, therefore, inclined to believe that the cardiac changes should be referred to the changes in the kidney. Many years ago he expressed an opinion, which holds good today, as to the probable pathology. So far as facts are concerned, we do know today more about the actual causal relation of nephritis and cardiac hypertrophy than did Bright. His explanation was that changes in the quality of the blood cause cardiac hypertrophy, due either to direct irritation of the heart muscle, or to irritation in the blood-vessels. That idea is held today in somewhat modified form.

There have been, however, a large number of theories proposed to account for this cardiac hypertrophy. One of the most prominent theories is that advocated by Traube. He believed that cardiac hypertrophy was due to the combined action of an increase in the quantity of the blood together with a decrease in the vascular bed. This idea is held today by a large number of prominent authorities upon diseases of the kidney. It does not seem to me satisfactory. In the first place, the cases of nephritis in which we notice the most marked cardiac hypertrophy are those in which there is little opportunity for the development of hydremia because they are accompanied by a large secretion of urine. On the other hand, nephritis which is accompanied by a decreased excretion of the urine, parenchymatous nephritis, is rarely, although sometimes, accompanied by cardiac hypertrophy.

A second causal factor which Traube advances is the narrowing of the vascular bed, due to destruction of the vessel of the kidneys. This theory seems to me of no value whatsoever, because we know experimentally that an entire kidney may be removed even, or larger vascular areas destroyed with cardiac hypertrophy resulting.

Another theory is that advanced by Gull, that nephritis is not a primary, but a secondary process, the result of diffuse changes in the blood-vessels everywhere throughout the body, a diffuse arterio-capillary fibrosis. This diffuse arterial change, by increasing the obstruction to the circulation, causes the heart muscle to hypertrophy, and in this way meet the additional demands put upon it. Unfortunately, while in many cases we find changes in the blood-vessels, we can not be sure that they are primary, and in a large number of cases of nephritis we find no such changes. This is especially true of acute nephritis. I believe today the best theory we could adopt, but one which is rather speculative, is that on account of the altered function of the kidney certain bodies are retained in the system which should be excreted, irritating either directly or indirectly the blood-vessels and causing obstruction to the circulation, so that the heart muscle must increase its power in order to perform the added work.

The physical signs of such cardiac hypertrophy do not differ from those of hypertrophy in any other case. The most important of all the physical signs is the increased cardiac dulness, due principally to an increase of the left ventricle, and therefore, mainly downward. There is some increase in the transverse measurements, but the apex is displaced much more downward than outward. Upon auscultation we find that the second aortic tone is accentuated. Frequently in these cases we find that not only is this tone accentuated, but it has a peculiar ringing character, not the result of increased blood pressure particularly, but of changes in the aorta. The third important sign is the change in the radial pulse, shown both by palpation and sphygmographic tracings. The apex of the curve is flattened, the elasticity waves exaggerated and the back-stroke wave lessened. With the aid of sphygmographic tracings we oftentimes get a strong suggestion as to the nature of the process. This cardiac hypertrophy is not found in all cases. The more purely the interstitial form of the disease is present, the more certainly will you find cardiac hypertrophy, and in cases of interstitial nephritis without cardiac hypertrophy we have always to look for some other explanations of the obscure cardiac hypertrophy. A certain number of cases, the indirect result of parenchymatous nephritis, will show cardiac hypertrophy. In the acute forms of nephritis we sometimes see developing within a few weeks considerable cardiac hypertrophy with all its consequent signs. Traube was the first to draw attention to the value of the cardiovascular changes in the early diagnosis of nephritis. It frequently happens that we get cardiovascular changes without there being any marked changes in the urine. The value of these changes to the life of the individual is very great, so great that many cases of nephritis are essentially heart cases rather than kidney cases. So long as the heart contracts strongly the patient gets along very well, but as soon as the heart fails to do this, the end is near. In a word, then, the cardiovascular changes may be regarded as uremic manifestations or as manifestations of retention in the system of bodies which ought to be excreted, and that is practically what we mean by uremia.

Two groups of theories have been advanced in regard to uremia—the mechanic and the chemic. Practically, most all modern observers have given up the mechanic theory of uremia, although there are some who cling to it, and among them Rosenstein, one of the great German authorities. He is still strongly inclined to believe that uremia is largely mechanic. Traube was one of the first to advance the theory and ably defended it, that uremia was largely due to circulatory disturbances in the brain; that the edema was due greatly to hydremia, and particularly to cardiac hypertrophy, as the result of edema, the blood-vessels are compressed, causing a cerebral anemia with consequent uremic manifestations. The symptoms of the anemia vary according to the portion of the brain affected. In those cases where we have coma the process is localized on the cerebral hemisphere; while in those cases where we have convulsions the mid-brain is affected more markedly. A number of other mechanic theories have been advanced, but no one of them is now regarded, with the exception of the one of edema and anemia of the brain.

Chemic theories have been numerous. Soon after the discovery of urea the theory was advanced that this body was the cause of uremia and it was found upon the examination of the blood of uremic patients that the percentage of urea was greatly increased; that oftentimes in uremic individuals there was ten times the normal amount of urea in the blood. But this theory was not held very long. Experiments were made in which large quantities of urea were injected into the animal organism, and yet uremia was not induced.

The next theory advanced was that of Friedreichs, who believed that uremia was due to intoxication with carbonate of ammonia. This theory had a still shorter life, because experiments showed that the symptoms of poisoning with carbonate of ammonia were different from those of uremia. The bodies were not present in quantities sufficient to bring about intoxication. Various other theories of bodies were advanced to explain uremia. Experiments were made with creatin, creatinin, hippuric acid, etc., with a view to bringing about uremia, but animals injected with those substances did not have uremia. After the discovery of the ptomains and leucomains, they also were regarded as bodies that would induce uremia; but this theory was soon abandoned. Furthermore, potash salts were blamed for inducing uremia.

Finally, we have the theory of Bouchard, that uremia is not due to any one body, but to a large number of bodies: that some of them are introduced into the system from without with our food; for example, those foods which contain potash salts. It is believed that other bodies, like organic foods, are subjected to changes in the intestines which render them toxic, and that those bodies in part account for uremia. Various assimilative processes in the body bring about changes and produce bodies which are toxic; certain of our own secretions, as the saliva, still more than bile, are toxic, and these being absorbed cause the symptoms of uremia. Bouchard separated these different kinds of bodies with some degree of satisfaction. He discovered one body which had the power of producing coma, one or two bodies which would produce convulsions, another which altered the temperature. He believes there are bodies, as yet undiscovered, which play a part in uremia, and that according as one body or another is in excess, so the symptoms vary. This brings us to the discussion of uremic symptoms.

Scarcely two cases present exactly the same complexus of symptoms; for example, one patient has headache, sometimes for many weeks and months, which is unexplainable until it is discovered that the kidneys are diseased. The headache may be diffused or it may be in the nature of a hemicrania. Another individual may suffer for a long time from gastro-intestinal disease, nausea, diarrhea, or something of that sort, and after considerable time it is discovered that the trouble is due to uremia.

The symptoms may be divided into four groups: a cerebral group, a respiratory group, a gastro-intestinal group and an arthritic group.

The cerebral form may be divided into several sub-groups, according as one symptom or another is most manifest—a com-

atose form, a convulsive form, a delirious form, and paralytic form. The comatose form is common and needs no comment. The convulsive form varies in its manifestations and simulates the convulsions of a wide variety of diseases; for example, it may simulate the Jacksonian epilepsy, an ordinary epilepsy, a tetany, a tetanus and others. The delirious form is not common, and may present itself either in the form of an acute delirium or of a chronic delirium. The intensity of the delirium, like its character, may vary. It may be like that of an acute mania, like an alcoholic delirium, or it may be a low muttering delirium, similar to that seen in typhoid conditions. Chronic deliriums may simulate any of the forms of insanity. The paralytic form is another form rarely seen, and may show itself either as a monoplegia, hemiplegia, or paraplegia. The pathology of these paralyses is not well understood. They may be of short duration or may continue till death, and at the autopsy the postmortem findings may be negative.

The respiratory group also may present itself in a wide variety of ways. The commonest form, and therefore the most important form, is that of asthma. This is an extremely common uremic manifestation, and should always be present in one's mind when consulted for an asthma developing late in life. The duration and number and severity of the attacks vary greatly, and the diagnosis can be made only upon examination of the urine. The other forms of the respiratory manifestations are less common, and may therefore be omitted. The articular form, recently described by Jaccoud, resembles either the gout or the rheumatism, and can be recognized only when an examination of the urine reveals the presence of nephritis.

It is scarcely necessary for me to say that this division of the symptoms and forms can not be carried out accurately in the clinic, and the division is made mainly for convenience and memory in teaching. Each case will clinically present symptoms of a number of these groups, but usually some one symptom is so much more prominent than any other that it enables us to place the case in some one of the groups mentioned.

(To be continued.)

Chicago Ophthalmological and Otological Society.

Regular Meeting held Feb. 14, 1899.

Dr. WARE occupied the chair, and presided over the meeting.

Dr. GAMBLE exhibited a case of

UNUSUAL FUNDUS CHANGES IN A CASE OF INHERITED LUES.

He said: This boy is 11 years of age. He came under my observation at the infirmary a few months ago, complaining that he could not see well. I found his vision $^{20}/_{100}$ in each eye at that time. With reference to personal history, he has never had a severe illness, nor has he had any disease of the eyes previously. His antecedent family history is not so good. His mother gave birth to a still-born child about one and one half years before the birth of the patient. The next but one younger than the patient died at the age of six weeks. Personal inspection of the boy shows very characteristic inherited syphilitic facies. The enamel of the central incisors is defective. We find the lymphatic glands involved, especially in the cervical and epitrochlear glands; flattened nose; linear cicatrices at angle of mouth, and other well-marked evidences of this inheritance. On examining the boy's eyes I found that he had an error of refraction $+4 = \text{cyl.} + 1$ ax. 180 in each eye. Both corneæ are normal in appearance. The lens in the right eye has a punctate opacity on the anterior surface, irregular in form, about 5 by 6 mm. There is some pigment also attached to the lens at this point, which is the remains of a posterior synechia resulting from iridocyclitis during intrauterine life. There is chorioretinal degeneration in the right eye, also atrophy of the disc. This atrophy is secondary. The arteries are reduced in size in the retina; the lamina cribrosa does not show, but there is a blue effect from the disc. The left eye is one that is of special interest to me. As I look into it, I find nothing abnormal except the refraction until I come to the fundus. The disc is bluish-white, very pale, vessels constricted, and on each side of the arteries is seen a streak of connective tissue, the result of periarteritis. I have never seen a case so pronounced in inherited syphilis. Another point that interested me was the marked chorioretinal degeneration. In cases of inherited lues we often see a patch in the periphery of the retina, but to see the whole retina involved, as in this case, is somewhat rare. Observation heretofore is that in cases of inherited lues it is rare to find the results of periarteritis. I have not investigated the literature very much on the subject, but what I have bears out my statement. However, we know that syphilis has a predilection for the arteries, and we speak of it as primarily a disease of the blood-vessels. The reason that we do not see these evidences of vascular trouble in these cases is probably due to the fact that the mild cases live, the severe ones die in utero, or soon after birth.

Regarding the treatment of this case, I have principally used placebos, as I think the process is practically stationary.

Dr. WARE—In syphilitic cases mercury can be used quite freely, both in children and adult cases, and I believe we have more success with mercury administered alone than with mercury and potash. In administering mercury to a child there is nothing like the inunction method, although in order to get its rapid effects it is also beneficial to give it internally. If mercury is pushed both by inunctions and internally there ought to be some benefit from it.

Dr. GAMBLE, closing the discussion—There is one point of which I wish to speak in connection with this case, and that is in regard to its treatment. My experience in the systemic treatment of these fundus cases with mercury and the iodids has been limited. I must confess I have but little faith in their efficacy, especially in a patient 11 years old. There could be but little question raised against their use during the first few years of life, for the tertiary stage may still have not spent all its force.

I have seen but little good come from specific systemic treatment in cases of interstitial keratitis. It seems to me, interstitial keratitis is a postsyphilitic disease of the uvea with a resulting involvement of the cornea. If any pathologic changes are occurring in choroid or retina at present in this case, I would consider them also postsyphilitic. If this is true, mercury would be of little avail. However, in deference to the opinions of those whose experience is greater than mine, I will give the boy the mercury inunction treatment as suggested by Dr. Gradle and Dr. Pinckard, and watch carefully for results. Owing to the atrophy of the discs and retinæ the acuity of vision can not be raised to any considerable extent.

OBSCURE TUMOR OF THE SCLERA.

Dr. C. P. PINCKARD—This interesting case was first seen by me Dec. 29, 1898. The following history was told: Some two weeks previously the child had a feeling of foreign body in the left eye. The mother examined the eye and noticed a small growth. It was very small and not injected. As it continued to grow, she brought the child to me.

The family history is good, except for a suspicion of specific trouble on the father's side, which could not be verified, as the father could not be seen. Evidences of inherited lues are present in the child in the shape of enlarged glands, notched teeth, etc., but these are not well marked.

On the left sclera, about 2 mm. below the corneal border, a yellow mass 4 mm. in diameter, almost hemispheric, was seen, to which and over which there were a considerable number of small blood-vessels. The conjunctiva was freely movable over the tumor. There was no pain or tenderness; the cornea and iris were normal, and vision normal. It was impossible to see any change in the ciliary body with widely dilated pupil.

The question of treatment depended entirely on the diagnosis. The suspicion of hereditary lues determined a trial of iodid and mercury. Daily inunctions and beginning doses of 10 grains potassium iodid four times per day, rapidly increased to 50 grains four times per day, were started, and have been taken since that time.

The effect on the tumor has not been brilliant. For three weeks it continued to grow until it attained the size you see it now (about 6 mm. in diameter). Since that time, that is, for two weeks, it has not grown, but remained stationary. The effect of treatment on the congestion has been rather marked. For the past two weeks it has steadily diminished.

The child, in spite of the large doses, has not yet become saturated with iodid and mercury. The diagnosis seems to lie between gumma, tubercle and sarcoma. I can not see how it is possible to decide for the present. The indefinite, but suspicious family history, the physical signs, though not marked, the apparent cessation of growth of the tumor under iodid and mercury, and the ability to take such large doses without saturation, would seem to indicate that the tumor is a gumma. About January 15 it was noticed that the center of the tumor looked soft and gelatinous, and the sarcoma side of the diagnosis became more prominent. I shall be more than glad for any suggestion as to diagnosis or treatment, as the case seems to me to be very obscure and very interesting. I feel that as the tumor is not spreading, nor threatening to extend into the orbit or brain, a conservative course is the proper one. I have had a number of cases of specific troubles where no effect from medication was observed for some time, yet when improvement did start, it was very rapid. My idea is, to still increase

the doses until this boy becomes saturated, and to keep him so until a fair chance is given the tumor to respond. As far as is known, the tumor began two weeks before December 29, that is, about nine weeks ago. How long it existed before that we can not tell. It has never given the child any trouble, nor has it affected the vision or fundus, which are still normal.

Dr. WARE—Naturally we would compare this case with the other one that has been exhibited, and I should say from the appearance, without going into the case very minutely, that it would suggest hereditary trouble. I should suppose that Dr. Pinckard can do no better than to continue the antisyphilitic treatment.

Dr. PINCKARD—There is no irritation in the eye whatever, and the trouble seems to be entirely confined to the sclera. Dr. Gradle's suggestion that in case antisyphilitic treatment fails, tuberculin be tried, will certainly be followed.

Orleans Parish Medical Society.

Meeting at New Orleans, La., Feb. 25, 1899.

Dr. RUDOLPH MATAS exhibited the lithotrite of Dr. Chismore of San Francisco, and called attention to the

GENERAL APPLICABILITY OF LITHOLAPAXY

in the treatment of stone in the urinary bladder. The majority of cases are suitable, those being excluded in which great prostatic hypertrophy or severe cystitis exists, the former condition interfering mechanically while the latter requires the free drainage given by an incision. Brief reference was made to the cutting operations for stone, the suprapubic, lateral perineal and median perineal. The last was recommended as the preferable operation, the first being objected to as keeping the patient in bed several weeks, soaked with urine. Apropos of the relative simplicity of litholapaxy, a case in point was related; it was that of a paraplegic who had been in bed a long time and in whom a calculus had developed as the result of cystitis. The condition was such that bloody operative intervention of any severity would have been the last straw. Within an hour the stone, weighing nearly a dram, and consisting of an uric acid nucleus with phosphatic accretions, had been crushed and delivered with the Chismore apparatus, this under the influence of solutions of cocain varying from 2 to 4 per cent. Attention was called to the freedom from toxic symptoms attending the use of cocain solutions as strong as 4 per cent., in the bladder; this is in marked contrast with the results of cocain used in the urethra, where it has caused death on more than one occasion. The Chismore lithotrite is a modification of the old Thompson instrument rather than of the Bigelow pattern, having smaller blades than the latter. A feature of the male blade is its tubular form, permitting: 1, the evacuation of débris without removal of the lithotrite and substitution of the evacuating tube; 2, the escape of the cocain solution or the addition of more if needed, and 3, the introduction of a stylet for the dislodgment of fragments caught in the serrations of the blade. The blades are approximated or separated by means of a rack and pinion, while a knob is provided for making direct hand pressure on any object in the bite of the instrument. A distinctly novel device is the detachable percussor, provided with a trigger arrangement by means of which sharp blows are given the male blade. The taps of this percussor—the idea of which was suggested to Dr. Chismore by an automatic dental plugger—break the stone along the lines of crystallization. The aspirator consists of a rubber bulb of convenient shape, easily grasped with the hand, and provided with a glass receiver which is screwed on; there is here a valvular arrangement to prevent débris once drawn in from passing out again. This aspirating bulb may be attached to the male blade and the débris evacuated directly, though the Bigelow evacuating tubes permit the more easy removal of the stone dust.

Dr. Matas also related a case in which Coley's treatment by the

INJECTION OF THE MIXED TOXINS

of erysipelas and the bacillus prodigiosus had caused the disappearance of a tumor that gave strong clinical evidence of being a sarcoma. The patient, a white man of 30 years, had been an inmate of the Charity Hospital two years previously, when an abscess of the right lumbar region was successfully treated by incision and drainage. Six months ago he was brought to the hospital from Mississippi, by his medical attendant. The appearance presented was that of one suffering with the cachexia of advanced malignant disease; the patient was yellow, marasmic, almost cadaveric. In the right lumbar region was a dense, hard, ligneous mass, extending to the hypogastrium above, the ilium below, toward the middle line neutrally. No signs of inflammation were present, nor had any been observed; the temperature was normal; the exploring needle brought out blood only. Sarcoma of rapid development was diagnosticated; the patient refused to permit an exploratory operation. After about ten days the toxin treatment was begun. The dose injected into the mass was increased from ½ minim to 10 minims in the course of fourteen injections before any decided reaction was observed. By that time the tumor had dwindled considerably. Dwindling continued under the use of the injections until at the present time there is no tumor; the man has gained forty pounds and is strong and well.

Dr. C. J. MILLER related a case of

FATAL PYEMIA

occurring in a negro infant of seven weeks. There was no lesion through which the infection could have taken place; the cord had fallen at the end of the sixth day and left a normal umbilicus. The initial symptom was swelling of the scrotum, in which pus was at no time detected; metastatic abscesses developed in the left lower extremity, right upper extremity, left upper extremity, and occipital and left parietal regions of the scalp. Death took place from exhaustion at the end of ten days; tympanitis existed at that time; no postmortem was held. In answer to questions, Dr. Miller stated that the appearance of the affected regions was not erysipelatous; the febrile movement had been slight; no gases developed in the tissues; the mother had neither mastitis nor fissured nipples.

Dr. M. J. MAGRUDER related

AN OBSTETRIC CASE

in which violent vomiting had come on several hours after the inception of labor, when the pains were very severe. Examination showed the first stage completed, the bag protruding from the cervix; the presenting part gave a doughy sensation on palpation, somewhat like that of placenta previa, though this condition was excluded. Rupture of the membranes was followed by the escape of large clots which appeared to come from the interior of the amniotic sac. The infant was stillborn, though life had been felt but a half hour previously. Possibly the placenta had been separated by the violent vomiting. At any rate the presence of the blood in the sac was an unsolved mystery. Dr. Miller suggested that the escape of the amniotic fluid had permitted the coming down of the blood which had accumulated between the sac and the uterine wall, from partial separation of the placenta.

Philadelphia Obstetrical Society.

Meeting held March 2, 1898.

Dr. CHARLES P. NOBLE officiated as chairman of the meeting. He announced the principal subject for discussion to be

RETRODISPLACEMENTS OF THE UTERUS.

Dr. WILMER KRUSEN spoke on causation of retrodisplacements; Dr. J. M. Fisher on the diagnosis; Dr. F. Hurst Maier, on the non-operative treatment; Dr. Richard C. Norris on suspensio-uteri and intraperitoneal shortening of the round ligaments; Dr. E. E. Montgomery on vagino-fixation, and Dr. Charles P. Noble on Alexander's operation.

Dr. KRUSEN, in speaking of causation of retrodisplacements of the uterus, divided the subject into those occurring in married and non-parous women. Of the causes which produced the condition in virgins he mentioned such as tight lacing, constipation, traumatism, congenital defects, masturbation, etc., the latter of which he thought counted as an etiologic factor in more cases than generally recognized. In married women he enumerated such cases as lacerations of the pelvic floor, metritis, salpingitis, endometritis, prolapse of the ovary, constipation and, especially during the puerperium, faulty and prolonged use of the binder.

Dr. J. M. FISHER, in speaking of the diagnosis of uterine displacements, detailed at considerable length the diagnosis of the most common displacements of the uterus, viz., retroversion and retroflexion, outlining the mode of arriving at a proper diagnosis. The symptomatology, such as given by the patient, he considers often misleading. A bimanual examination is the best, and he would condemn the use of the sound in the strongest terms, believing that a person who resorted to the sound as a diagnostic measure in retrodisplacements proved that he knew but very little of gynecology and might do great damage to the organ, especially if it was thin and bound down by adhesions.

Dr. F. HURST MAIER spoke of the non-operative treatment, which he had pursued in certain cases of retrodisplacements. He considers pessaries useful, and in some cases, in order to get one to fit the parts accurately, he has resorted to a copper

wire bent at a certain angle and covered with rubber, this conforming to the contour of the region, after which a hard rubber pessary could be moulded to the proper shape. The pessaries now used were the modification of the Hodge, mentioning that of Smith and Munde. He wished to draw particular attention to the subject of massage in these cases and outlined the plan taught him in Vienna. This consisted in the masseur being seated on the left side of the woman, when, pressing over the fundus, it could frequently be gently elevated, at the same time making firm but not too strong pressure of the organ and its appendages. This movement he had at times carried on for an hour at a time, but as a rule only a few moments were necessary to restore healthy circulation in the parts.

Dr. RICHARD C. NORRIS said that he had done within the past three years probably over fifty ventrofixations. Out of that number difficulty was encountered six times, two of which had been due to pregnancy. However, he relied on this measure as having distinct advantage, from the fact, as is well known, that it gave the operator opportunity of inspecting the uterus and appendages, when many conservative minor operations could be done, such as incising cystic ovaries, breaking up slight adhesions and resecting diseased portions of the ovaries. He preferred the spear-pointed needle instead of one with short edges. He had done Alexander's operation many times and thought it a conservative one, as well as giving good results.

Dr. E. E. MONTGOMERY being unavoidably absent, his paper was read by Dr. Hammond. The paper reviewed the history of vagino-fixation, and stated that in several instances he had resorted to one or the other modification, but was of the opinion that the procedure had a limited application.

Dr. CHARLES P. NOBLE stated that he had resorted to Alexander's operation in sixty-two cases, and had only encountered trouble in three instances—twice the ligaments had become detached from the uterus near its junction with that organ, and once there had been a stitch abscess. He thought the operation a very conservative one, having many advantages over other methods. In those cases in which the ligament had become detached he had resorted to ventrofixation. He took the position that there was no such condition as uterine displacement, from the fact that the uterus was a movable organ, and therefore, subject to different positions in the pelvis, according to the position occupied by the patient. On this account he defied anyone to tell the absolutely normal position of this organ. From this fact he was under the impression that little good could be derived from a discussion of the subject according to the program, because it placed those in positions such as he occupied at a disadvantage by thus admitting that there was such a thing as a displaced uterus.

Dr. ANNA FULLERTON stated that she thought one of the best periods to correct what had been denominated displaced uteri was in the first two weeks of the puerperium. In using the tampon, the knee-chest posture was the best.

Dr. BOYD spoke of the different operations resorted to, and showed a specimen in which after a fixation had been done, such firm adhesions had been formed that much difficulty had been encountered at a subsequent labor. Labor had been induced at the eighth month, but the child was lost.

Philadelphia College of Physicians.

Section on Surgery, March 1, 1899.

Dr. MUEHLECK of the St. Agnes Hospital spoke of the condition of the blood which occurred in the case of 144 soldier patients treated for typhoid fever in that institution. During the first week of the disease the erythrocytes presented no special changes in color or contour and the hemoglobin was only moderately reduced. A week or two later, however, the hemoglobin was reduced considerably, falling below 60 per cent. in some cases, but during the last week or beginning of convalescence it had risen to over 70 per cent. Late in the disease, in a few instances, the red cells had been reduced to less than 2,000,000 per cubic millimeter. In the majority of cases there was no increase of white corpuscles, but in a few instances there was a moderate leucocytosis, the count rising to over 20,000 per cubic millimeter, the polymorphonuclear variety constituting 23 per cent. of the proportionate number. Regarding the parasitology, Dr. Muehleck reported that out of the 144 cases of typhoid fever the malarial parasite was found seven times. Intracellular and extracellular bodies were found. They were usually non-pigmented and non-motile.

Dr. JAMES TYSON spoke of a few instances in which the malarial parasite had been found in the blood of typhoid patients, and also of the difficulty of recognizing the plasmodium in its earlier stages of development.

Dr. A. O. J. KELLY made a few remarks regarding the coexistence of malaria and typhoid fever occurring in patients brought in from the different army camps. Without knowing the previous diagnosis of these cases, he had in several instances been able to demonstrate the plasmodium in the blood.

Dr. CHARLES L. LEONARD read a paper on "The Roentgen Ray as a Means of Diagnosis in Renal Calculus," and presented two skiagraphs in which two stones in one case and one stone in another instance were found imbedded in the kidney. He thought that in some instances the reason failures had been encountered in detecting stones in the kidney by means of the X-ray was because the condition required currents of accurate strength, and a strong current might in this way entirely penetrate the opaque body without giving an imprint on the plate beneath. In time, it was the opinion of the speaker, this method would be of great importance as a diagnostic measure, not only in cases of renal calculi, but also in many other conditions of difficult character.

Dr. JOHN K. MITCHELL related an instance of a patient being presented to him with somewhat vague symptoms of calculi, but so indefinite that an absolute diagnosis could not be made from the clinical symptoms alone. Dr. Leonard had, however, made a skiagraph showing the calculus, which had been removed by a subsequent operation, and while pus had been present in the urine and considerable damage had been done to the affected kidney, the patient was now well on the road to recovery. In another case, in which Dr. Leonard had made a skiagraph, two stones had been demonstrated in the kidney, one overlapping the other.

Dr. JAMES TYSON spoke of the importance this subject had on the diagnosis of renal calculi and the accuracy with which the work could be done. In one case in which Dr. Leonard had made a skiagraph for him and demonstrated a calculus in the kidney, for which an operation had been done, he stated that the operator might have discontinued the search for the stone had not Dr. Leonard insisted that it was present. In another case, in which there had been symptoms of renal calculus, the X-ray was made use of, but no stone was found, although he could not say whether or not the stone had not already dropped into the bladder at the time the skiagraph was taken.

Dr. LEONARD, in reply to Dr. Morton, who had referred to a case of fracture in which the photographs had been used to the disadvantage of a surgeon in the courtroom, stated that in these cases an expert in this matter should always be present to explain to the jury the exact condition which might be present. In one instance a verdict of $3500 had been rendered, probably in a great measure from the fact that this precaution was not carried out in the legal proceedings.

Dr. W. W. KEEN desired to know whether or not a stone could be demonstrated after its impaction in the ureters, but Dr. Leonard could not say positively. He stated that at the present time an imprint of an opaque substance, as the hand, might be left on the sensitized sheet if held over a sheet of lead.

PRACTICAL NOTES.

Incubation Period of Typhoid Fever.—Apert reports cases of typhus abdominalis in which the incubation period extended forty-five to forty-eight days.—*Bulletin Méd.*, 1898, No. 88.

Varicocele and Sexual Power. In the *Clinical Journal* (February 15), Williams discusses the influence of varicocele on sexual power. His experience is that after an excision of varicosed veins patients have been more virile and enabled to fulfil their marital duties in a manner that was formerly impossible. In the case of a large varicocele with sexual debility, in which palliative means had failed to relieve other than the symptoms of weight and pain, he operated in the hope that excision might, while curing the former, also benefit the generative state as he had noticed in other instances. The result was that the patient was sexually rehabilitated. His preference is for the operation known as "Bennett's modification," which he describes in detail in the paper.

Benefits of Pleuritis Serofibrinosa. Le Damany agrees with Bier and Murphy that immobilization of the lung or part affected with tuberculosis, results in healing the tuberculous process. He therefore considers pleuritis serofibrinosa, which is almost invariably of tuberculous origin, a defensive process

on the part of the pleura against tuberculous germs invading from the lung. The immobilization of the lung resulting from the effusion results in healing the primary focus. Puncture and withdrawal of the fluid is prejudicial and should not be done except in case of dyspnea or congestion of the lung from very extensive effusions. He recommends rest in bed and opiates for the pains, but does not consider other remedies effective.—*Presse Méd.*, 1898, No. 90.

Typhus "Renalis."—As a contribution to the study of typhoid fever in which the renal mask the abdominal symptoms, Rostoski publishes two observations in detail (von Leube's clinic), in the *Munich Med. Woch.* of February 14. The symptoms suggested severe nephritis, although there were no uremic symptoms or edema, and nothing indicated an infection except the high temperature and enlarged spleen. The Widal test resulted positively; weak at first, but very decided later, and colonies of the bac. typhi developed from the urine on agar. In one case roseola was noted on the abdomen after a month, but transient. There were no intestinal symptoms until the fiftieth day, when suddenly all the classic symptoms of peritonitis appeared, following an enema to relieve the constant constipation, continuing more or less severe for two weeks, when the patient entered upon convalescence. Curschmann has noted six out of seventy-three cases of "perforation peritonitis" in typhus, occurring after the fortieth day and one after the hundredth.

Treatment of Syphilis by Cyanid of Mercury.—Arthur Chopping (*Lancet*, February 13) reports a series of eighty-four cases of syphilis in various stages of the primary and secondary phases of the disease, which were treated with intravenous injections of cyanid of mercury. The amount used was about 20 minims of a 1 per cent. solution, the injection being made every day. The length of the treatment lasted from four or five days up to nearly two months; the average stay in a hospital was 23.2 days. The results appeared to be very generally good. The author claims the following advantages for this treatment: 1. As the injection is made daily the patient is under constant observation. 2. The exact quantity of mercury introduced into the system is known, which is not the case when pills or inunctions are used. 3. As the drug is administered by intravenous injection the patient is much more rapidly brought under its influence than when administered by the mouth or skin—a marked advantage in cases where it is necessary to produce the full effect of the drug as speedily as possible, such as iritis, otorrhea, bad ulcerated laryngitis, etc. 4. The rapidity with which serious lesions and visible evidences of the disease clear up. 5. The treatment by intravenous injection is especially useful in cases which have not responded to the ordinary methods of treatment, such as pills, inunctions, etc. The cases are given in detail in tabulated form.

Metastases of Malignant Tumors of the Testes.—A study of six cases that have succumbed to metastases, although the primary tumor had been extirpated at a period when no dissemination was apparent, showed that the retroperitoneal lymph glands were the first and principal ones affected. The tumors were mostly of a sarcomatous nature and distinguished by a peculiar malignity (Most, in *Virchow's Archiv.*, cliv, No. 138). He adds, as the result of further research on cadavers, that the testes are abundantly supplied with lymph-vessels. They leave the gland with the funiculus spermaticus and pass through the inguinal canal in four to six large stems, behind the peritoneum to the level of the lower pole of the kidney, then turn toward the median line and debouch in the first glands. They do not branch at any place. The first glands, two to four in number, are located near the aorta on the left; on the right they all lie without exception directly over the vena cava. Back of the larger abdominal organs a network of vessels with glands extends from their bifurcating point upward to the neighborhood of the cysterna chyli. These glands can be injected from the testes. The lymph flows from these regions through branches which pass upward behind the large abdominal and renal vessels and debouch in the cysterna chyli. The metastases of tumors of the testes correspond to this course of the lymph vessels. The ductus thoracicus plays an important part in the process. The prognosis is bad with retroperitoneal tumors, but still worse with metastatic glandular tumors. Surgical intervention in these cases is not advisable.—*Cbl. f. Chir.*, February 11.

Treatment of Fractures.—Goliakovsky has been comparing the different methods of treating fractures—with ninety-seven personal observations—and concludes that immobilization is the least advantageous, as it favors the production of ankylosis, atrophy of the muscles, etc. Massage remedies these inconveniences and shortens the time of treatment by one and a half times. It is, however, far from the ideal method, as it favors a vicious position for the fractured ends and sometimes causes an undue development of callus that interferes with the functions of the limb. Fatty embolism and lymphangitis have also been observed, directly traceable to the massage, which in non-medical hands exposes to still greater dangers. The treatment which to date seems to be the best, is early mobilization, "introduced by the Russian surgeons in 1880." Owing to the erect position, walking and the venous hyperemia, the callus forms more rapidly, favored by the friction between the fragments. If the apparatus is well made there is no fear of displacement. As this method is so simple and rapid it can be applied on the battlefield and to dispensary patients, and is especially indicated in cases of alcoholism, debility, and for elderly persons. He adds figures showing the average length of treatment: with immobilization a fractured femur heals in 86 days; with massage, in 61 days; with early mobilization, in 50.7. Metatarsus: with immob. in 32.5 days; mass. in 21; early mob., 24.5. Fibula: with immob., in 39 days; mass., 34.5; early mob., 24 days, etc.—*Presse Méd.*, January 28.

Endometritis Dolorosa.—Certain women suffer from continuous pain in the region of the uterus, increased by effort, ascribed by some gynecologists to pelvic neuralgia connected with some slight lesion of the uterus, by others to general neuropathy, but resisting all treatment based on these premises. Prof. V. T. Sneguireff has been studying nine cases (from 22 to 46 years of age; all had borne children), and finds that the pain is localized at five points on one or both sides, the emergency of the two branches of the N. iliohypogastricum, or the N. cutaneous femoris ant. ext., of the N. spermaticus ext. and of the N. ilioinguinalis. There may be radiations to the hypogastric, renal and solar plexus, to the intercostal spaces, to the precordial region, and in cases complicated with lesions of the annexes, to the sacroiliac symphysis, along the sciatic and to the lumbar and dorsal regions, but the five points mentioned and especially the first and last, differentiate endometritis dolorosa. There is little, if any, leucorrhea. The menstrual flow is normal in amount but is accompanied by a more or less intense dysmenorrhea. The cervix, although congested and livid, is but slightly modified as to shape or consistency. Exploring the uterus with a sound is sometimes so painful as to cause syncope or convulsions. He considers the affection an inflammatory lesion of the uterine mucosa, localized especially in the fundus, at the internal orifice and openings of the tubes, producing phenomena of painful spasm similar to those produced by fissure of the anus where there is neuropathic predisposition. The treatment is indicated by this analogy, and he has found his views confirmed by the invariable success attained by dilating the matrix and tamponing with iodoform gauze, repeated at intervals until the entire disappearance of the symptoms, which soon follows in non-complicated cases. The dilation is accomplished with Hegar bougies, and should be pushed as far as possible, and the gauze left as long as possible, with anterior sphincterian hysterectomy in case of stricture.—*Semaine Méd.*, February 8.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance $5.00
Foreign Postage 2.00
Single Copies . . . . . 10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street (Occidental Bldgs.), Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street (Occidental Buildings), Chicago.

Original communications are only received with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, MARCH 11, 1899.

THE PROPOSED EXTINCTION OF TUBERCULOSIS

The confident hopes now entertained that tuberculosis can be exterminated as a disease, and the present active interest in the subject of its prevention, are facts of the times worthy of serious consideration. It may be well to study also certain other facts that may be encouraging in some of their aspects, and yet not altogether so in others. The bacillus of tuberculosis is, perhaps, of all pathogenic microbes the most widely disseminated—no one in our civilization is absolutely free from the possibility of its infection. It is said that the results of postmortems show that from two-fifths to over one-half of all persons dying from whatever cause, that come to the autopsy table, give evidence of tuberculous infection in the lungs—the region where the germ exerts its most deadly action—and this result has been confirmed in the living by the X-ray (KELSCH). This goes to prove that while the tuberculous germ is everywhere, and that while it finds a favorable soil for its development in the lungs of a very large proportion, if not a majority, of mankind, in only a minority is it able to so far overcome the vital resistance of the organism as to develop its most damaging or fatal effects. The majority of mankind appears to have acquired a partial or total immunity to this pathogenic species.

It appears to be also a fact that tuberculosis has within the past few decades been diminishing in importance as a factor in human mortality. This has, doubtless, especially of late years, been due in part to our better knowledge of the nature of this special disease and the best means of avoiding and counteracting it; and in this line we may hope for still greater results in the way of both prevention and cure. In part also a better knowledge of general hygienic requirements and improved modes of living have had their share. There still remains, however, another possible factor, an acquired immunity derived from a racial familiarity with the disorder. That such an immunity exists, to a certain extent at least there is every reason to believe. First, we have in play the natural selective action of the disease itself culling out the defectives and leaving a more vigorous stock more resistant to its own attacks; second, the analogy with other diseases from the more or less completely self-protective ones, like measles or smallpox, to those more remotely such, as typhoid and diphtheria. Then we have the well-known fact of artificial immunization, which is probably paralleled by natural processes, which we see, to some extent, actually at work. Asiatic cholera runs like wild fire through Europe, while in India, where it is endemic, it is hardly a dreaded disorder. Measles, a trivial disorder here, has depopulated the Pacific islands. The transplantation of diseases to new fields is characterized by their aggravations; microbes, like other members of the vegetable kingdom, grow best in virgin soil.

If this immunity exists, it remains a serious question whether, if we are successful to any extent in our efforts to exterminate tuberculosis, we may not be preparing the way for a greater virulence of the disorder when it does occur. That it can be totally destroyed among us is practically outside of all probabilities; its range in the animal kingdom, both domestic and feral, is too great to make this even a possibility. Could tuberculosis be made extinct in one part, with modern communications it could not long remain so, and its severity when once introduced would be possibly enhanced. The house, swept and garnished, might be only made ready for a sevenfold more virulent invasion.

It may be well, therefore, to moderate our expectations, while not abating any reasonable efforts for the restriction of the disorder. Improved hygiene, fuller disinfection of houses where tuberculosis has existed, restriction of public expectoration, especially in crowded apartments and conveyances, better instruction of the public as to the questions of infection, heredity, etc., and, perhaps, also notification and registration of cases, are measures that may all be legitimately resorted to. On the other hand, any too rigorous or inhuman restrictions on the unfortunate victims, absolute isolation, muzzling (as has been actually proposed, to prevent infection by the breath), and a host of other inconvenient methods and appliances that zealous reformers have proposed, can only overdo the work and bring it into disrepute. We should remember that under existing conditions nearly or quite one-half of us are or have been tuber-

culous, and that, fatal as it yet is, consumption is speedily becoming less formidable to the human race, even without the elaborate measures now being devised to combat it.

THE ANTITOXIN TREATMENT OF DIPHTHERIA.

There is little diversity of opinion as to the utility of the antitoxin treatment of diphtheria among those who have had the largest experience, and are thus entitled to a hearing. There is, however, not an inconsiderable body of the profession who, for one reason or another, think the subject still surrounded by doubt, and thus refrain from using a therapeutic agent whose claim to confidence has been incontestably established by the results of extensive clinical experience. To those who have not yet been convinced we commend for earnest consideration a masterly contribution to the literature of the antitoxin treatment of diphtheria by GOODALL in the *British Medical Journal* for Jan. 28 and Feb. 4, 1899, in which is presented a judicial analysis of the subject in all its varied aspects.

A study of the figures shows that the case-mortality from diphtheria in London has fallen from 24.7 per cent. in 1894 to 17.4 per cent. in 1897. The reduction has, however, been much greater among the cases admitted to the hospitals of the Asylums Board than in the city at large, i. e., from 25 per cent. to 14.9 per cent., as against a reduction from 24.5 per cent. to 20.1 per cent. among cases not admitted. This difference becomes the more emphatic when it is borne in mind that the fatality of the hospital-treated cases has usually been higher than that of cases not so treated. Not all of the cases of diphtheria received into the hospitals, however, were treated with antitoxin, but in 1897 this number reached 80.2 per cent. Many cases were admitted so late that no treatment could avail, and the hospital mortality is thus larger than it otherwise would be. The figures given are based upon the annual reports of the Statistical Committee of the Metropolitan Asylums Board. Corrected for errors in diagnosis they show a reduction in case-mortality from 30.4 per cent. in 1893 to 17.67 per cent. in 1897. In children under 5 years of age the reduction was proportionately even greater—from 53.3 per cent. to 24.9 per cent.

Among 3275 cases of laryngeal diphtheria seen at the Hôpital Sainte Eugénie from 1854 to 1875 and at the hospitals of the Metropolitan Asylums Board, recovery occurred in 1008—33.8 per cent.; while among 745 cases from several sources not operated on recovery ensued in 335—44.9 per cent.; and among 8927 cases from numerous sources in which tracheotomy was performed, recovery took place in 2543—28.4 per cent. Since the introduction of the antitoxin treatment there were among 3486 cases of laryngeal diphtheria from various sources, 2522 recoveries—72.3 per cent.; among 1831 cases not operated on, 1471 recoveries—80.3 per cent., and among 2574 cases in which tracheotomy was performed, 1506 recoveries—63.4 per cent. All of these cases were treated with the antitoxin.

That laryngeal involvement is less common in cases treated with the antitoxin is shown by the fact that during 1894 among 3042 consecutive cases of diphtheria not treated with the antitoxin in the hospitals of the Asylums Board, laryngeal symptoms developed in 116—3.8 per cent.; while in 1895 (when 61.8 per cent. of the cases were treated with the antitoxin), laryngeal symptoms developed in 18 among 2695 cases—0.67 per cent.; and in 1896 (when 66.6 per cent. of the cases were treated with the antitoxin), laryngeal symptoms developed in 16 among 3300 cases—0.4 per cent. Further, among 412 cases in which diphtheria occurred as a complication of scarlet fever during the year 1896, and laryngeal symptoms were not present when the serum was injected, the larynx was invaded in 5—1.2 per cent.; while among 236 similar cases not treated with the serum, at any rate until after the development of croup, the larynx was invaded in 36—16.6 per cent. Besides, there have been almost no cases for three years in which laryngeal obstruction arose after admission to the Eastern Hospital, where the antitoxin is injected immediately after entrance.

Among 131 fatal cases not treated with the antitoxin in 1894, death resulted from extension of the membrane along the respiratory tract in 22—16.7 per cent., and from bronchopneumonia in 21—16 per cent.; while among 103 fatal cases treated with the antitoxin in 1896, and among 171 treated similarly in 1897, the number of deaths resulting from extension of the membrane was 3—2.9 per cent., and 5—2.9 per cent. respectively, and from bronchopneumonia 4—3.8 per cent., and 9—5.2 per cent., respectively.

Of 1580 cases of diphtheria treated with the antitoxin in 1895, 1896 and 1897, 293 developed paralysis—18.2 per cent. In cases in which the serum was employed on the first day, this complication appeared among only 5.7 per cent.; in those in which the serum was used on the second day the paralysis appeared in 10.1 per cent. Only one case of severe paralysis occurred among the patients treated with the antitoxin on the first two days, and among these there was no death due to the complication. There were only 9 such cases with 3 deaths, among those treated within the first three days. On the other hand, there were 51 severe cases with 15 deaths among those not brought under treatment until the fourth day or later. Among 483 cases of post-scarlatinal diphtheria treated during 1896 in the hospitals of the Asylums Board, with the antitoxin, 34 became paralyzed—7 per cent.—as compared with 21.3 per cent. among similar cases admitted directly from the outside, but 413 of the cases—85.5 per cent.—were treated on the first two days. Only one of the 34 cases of paralysis terminated fatally. Among 452 cases treated in the Eastern Hospital during 1894, immediately before the introduction of the antitoxin, there were 49 cases of paralysis—10.8

per cent.; 5 of these were severe and four terminated fatally. A comparison of the cases treated in 1892, 1893 and 1894 (without the antitoxin), with those treated in 1895, 1896 and 1897 (with the antitoxin), shows that those treated early with the antitoxin were less likely to develop paralysis than those treated early without the antitoxin, and that although paralysis was more frequent in cases treated with the antitoxin, the proportion fatal from this case was not essentially different in the two sets of cases.

The influence of early treatment is shown also in the fatality, as well as in the incidence of paralysis. Thus, in 1894, when the antitoxin was not used, among 133 cases admitted on the first day of the disease, 30 died—22.5 per cent. And among 539 admitted on the second day 146 died—27 per cent.; while among 143 treated with the antitoxin on the first day 7 died—4.5 per cent.—and among 809 treated on the second day 130 died—14.9 per cent. In 1897, among 66 cases treated on the first day, 1 died—1.5 per cent.—and among 317 treated on the second day 16 died—5 per cent.

In the cases of post-scarlatinal diphtheria the mortality between 1871 and 1894 varied in the different hospitals from 42.8 per cent. to 61.9 per cent.; while since the introduction of the antitoxin the mortality has varied from 5 per cent. to 25 per cent. in 1895, and from 4 to 5 per cent. in 1896 and 1897. Even if all of the mild cases are excluded and all of the fatal cases are included, the mortality for 1896 would be only 20.1 per cent., and for 1897 only 15 per cent.

Finally, among the clinical evidences of the utility of the antitoxin are the inhibition of extension of existing membrane, and of the formation of fresh, while that which is present clears off more quickly than usual; the foul discharge that attends involvement of the nares soon ceases, and breathing and swallowing are rendered easier; the enlargement of the cervical glands and the inflammation of the tissues of the neck subside; the pulse-rate and the temperature fall; appetite returns; and the patient is soon convalescent; while even in the fatal cases the last moments of life are made more tolerable.

In conclusion, GOODALL expresses the sentiment that "few of even the most useful" of the agents of the pharmacopeia "have been subjected to the same fierce criticism as has the antitoxin of diphtheria, and still fewer have borne the ordeal as triumphantly, and from this there can be no dissent."

The results of this analysis show, as all the statistics tend to show, that as a direct outcome of the use of the antitoxin in the treatment of diphtheria, the mortality from the disease has been greatly reduced, both in the community at large and in the hospitals; that laryngeal and bronchopneumonic complications are less common and less fatal; that paralysis is more commonly observed (perhaps because more severe cases survive), though not more fatal; that the results are the better in all respects the earlier the treatment is instituted; that the clinical course of individual cases is rendered milder and more favorable; and that the antitoxin possesses distinct immunizing power.

A further illustration of the prophylactic value of the antitoxin is afforded by the experience of ALLAN, who relates, in *Treatment* for January 12, how in an institution accommodating sixty children a threatened epidemic was averted by timely immunizing injections. It appears that one of the children, while visiting a friend, was exposed to infection with diphtheria, and in returning home developed the disease and transmitted it to the girls in the beds on each side of her own. These three children were removed to a hospital, and no further cases appeared until after their return several weeks later, when five children in the same dormitory were attacked. On bacteriologic examination diphtheria bacilli were found in the throats of two of the earlier patients. During the following month several other children developed the clinical symptoms of diphtheria, and several more had inflamed throats without membrane. At this time a protective dose of antitoxin was given to all of the children, and from now on, although diphtheria bacilli persisted in the throats, there were no more cases of diphtheria or of sore throat.

GONORRHEAL SEPTICEMIA AND ULCERATIVE ENDOCARDITIS.

The cardiac complications of gonorrhea are treated quite extensively in a recent contribution by THAYER and LAZEAR.[1] The gonococcus has been shown to be capable of causing grave local as well as general septic complications. Cystitis, periurethral abscess, salpingitis and peritonitis, etc., have been quite clearly demonstrated to be caused by the gonococcus in a number of instances. The presence of the gonococcus in joints the seat of gonorrheal synovitis, has been demonstrated by many observers; it has also been obtained in pure culture from subcutaneous and other abscesses, from pleural effusions, and from the circulating blood (THAYER and BLUMER, THAYER and LAZEAR). It would, therefore, not be remarkable that the gonococcus should be found as the cause of endocarditis and other inflammatory changes in connection with the heart.

Endocarditis is by far the most common of the cardiac complications of gonorrhea. GURVICH[2] collected 110 clinical instances, in 77 of which the facts were stated clearly enough to allow of quite definite conclusions. Pericarditis seems to be much less frequent than endocarditis, THAYER and LAZEAR being able to find reliable records of 17 cases. They were also able to collect 32 instances of gonorrhea with fatal cardiac complications, 31 of which were instances of ulcerative endocarditis, with or with-

[1] Journal of Exp. Med., 1899, Vol. iv., p. 81.
[2] Quoted by Thayer and Lazear, loc. cit.

out pericardial or myocardial changes, one case, that of COUNCILMAN, being an instance of peri- and myocarditis alone.

From a pathologic standpoint these cases of gonorrheal endocarditis may be considered in five classes: 1. Those instances in which the history shows the association of the process with gonorrhea, but in which there is no record of any bacteriologic examinations. 2. The cases of mixed or secondary infections, organisms other than the gonococci being obtained in pure culture, although in some cases organisms morphologically similar to gonococci were found. 3. Cases in which organisms possessing the morphologic and staining characteristics of gonococci were demonstrated to be present in the lesions, but in which cultures were not made. 4. A group of cases in which cultures made upon ordinary media remained sterile, while the microscopic examination of the lesions showed organisms having the characteristics of gonococci. 5. The cases in which the purely gonococcal nature of the endocarditis may be considered as definitely proven by obtaining the gonococci in pure cultures, either during life or after death, and by demonstrating their presence in the lesions after death. There are only five cases recorded that may be placed in this group, in which the chain of evidence is complete. In one of these cases, viz., that of LENHARZ,[3] pure cultures of gonococci were obtained from the thrombi on the aortic valves, and the introduction of a piece of the softened thrombus into the human urethra gave rise to a characteristic gonorrhea, with gonococci in the discharge.

The anatomic lesions in those cases in which the purely gonococcal nature of the infection is probable or proven, corresponds to that of ulcerative endocarditis in general, with extensive polypoid fibrinous deposits, and more or less actual destruction of the valves, often associated with the formation of valvular aneurysms and perforations.

There appears to be no particular relation between the time of the onset of the endocardial infection and the duration of the urethral involvement, some cases developing almost at once after the onset of the urethritis, others weeks or months later. Some cases occurred in the first attack of gonorrhea, others in persons who had suffered once or twice before. Arthritis preceded the cardiac complication in most of the cases, but in not a few the endocardial affection occurred without or before the articular symptoms.

The general symptoms of gonorrheal endocarditis differ in no essential from those of endocarditis of other origin. There is generally an irregularly intermittent or remittent fever, associated with severe chills, profuse sweating, marked anemia, and albuminuria. The duration of the attack, in the cases in which the purely gonococcal nature of the infection seems probable, varied from ten days to six months. In THAYER and LAZEAR'S case the septicemic symptoms persisted for six months.

It appears, then, that it is definitely established that an acute gonorrhea may be the starting-point of a grave septicemia, with all its possible complications, the infections being either mixed or secondary, or purely gonococcal. During the course of this septicemia endocarditis may develop, and it may in some cases assume a rapidly fatal course, the symptoms being those of acute ulcerative endocarditis. The endocarditis of gonorrhea is not rarely due to the gonococcus alone, but may also be the result of a secondary or mixed infection.

[3] Thayer and Lazear, loc. cit.

PROGRESS OF THE ANTIVACCINATION MOVEMENT.

The English politicians probably did not realize how far-reaching would be the influence of their action when they passed a vaccination bill with a conscience clause. No doubt, emboldened by this compromise measure, antivaccinists elsewhere are assuming the offensive and we may look for a widespread agitation attacking the utility and the efficacy of vaccination as a protective measure in the prevention of smallpox. Already a bill has been introduced into the Pennsylvania Legislature directed toward the repeal of the present vaccination law, which requires every applicant for instruction in the public schools to present a certificate issued by a physician that the child has been successfully vaccinated before it can be received as a pupil. It is admitted by those who are best informed that no single measure has been more potent in preventing disease than has vaccination in the prevention of smallpox; and it would be no less than criminal to repeal an act that has accomplished so much good as the law now attacked in Pennsylvania. Through the agency of vaccination a virulent epidemic scourge has been transformed into a comparatively innocuous and sporadic disease, with which many physicians are personally unacquainted. In Germany, smallpox has by this means been eradicated from the army and its prevalence in the community has been reduced to a minimum.

We grant that the State may have no right to interfere with those who are willing, from whatever motive or even without any motive, to expose themselves to the risk of infection with smallpox (though in some places penalties are prescribed for unsuccessful attempts at suicide), but we must insist upon the right, yea upon the necessity, of protecting others, and especially those not able to stand up for themselves, from the unavoidable results of such action. If the danger were confined alone to those who think they must constitute themselves martyrs, we could view their action with some degree of complacence, but each person attacked with smallpox becomes a menace and a focus of infection for innumerable others, and it is for these that we make our plea for the retention on the statute books of laws that ensure the vaccina-

tion of all pupils in the public schools. It is well known that the school is a most common medium for the transmission of infectious disease, and the children may carry smallpox to adults.

It seems scarcely possible that any attempt to change or abolish existing salutary legislation concerning vaccination shall succeed, but we must not rely too implicitly upon such self-assurance. Those who believe in the utility and the efficacy of vaccination and in the wisdom of laws making such protection obligatory, must now assume the aggressive and unite in their efforts to counteract the influence of ignorance and fanaticism, as those who are opposed to its practice have united and have precipitated this contest. A hearing before the Committee on Education of the Pennsylvania Legislature, at Harrisburg, will be granted on March 14 at 8 P.M., to those in favor and those opposed to the bill of repeal, and it is hoped that individuals and societies will devote their energies personally and collectively to convincing members of the Legislature of the great utility of the present law, which has proved so important and so serviceable a hygienic measure. The College of Physicians of Philadelphia, at a meeting held March 1, adopted resolutions in opposition to the proposed repeal, and appointed a committee to represent that body at the public hearing. It is long since Pennsylvania has suffered from a visitation of smallpox, and it would seem almost necessary that some serious sacrifice of life should be made in order to convince of the utility of vaccination those that have eyes and see not. What we have said of Pennsylvania will apply with not less force to other States. If the efforts of the antivaccinists should prove successful in that commonwealth in breaking down the force of the vaccination laws it will not be long before they shall have invaded other States. The time to destroy the pernicious movement is now, while it is still in its incipiency, unless we wish to be transported to the condition of affairs that existed in England prior to the discovery of vaccination, when the deaths from smallpox exceeded those from all other causes combined.

CORRESPONDENCE.

Oysters and Bacteria.

LONDON, ENG., Feb. 25, 1899.

To the Editor:—The committee upon the relation between oysters and disease which was appointed three years ago, has just made its final report to the Royal Society through two of its members, Professors Herdman and Boyce, and while their preliminary conclusions and partial reports have already been discussed in our columns (vide JOURNAL, p. 1484, 1898), complete findings seem of such interest as to merit further comment.

The chief interest centers in the bacteriologic part of the report, in view of the bad name which has been given to oysters of late years as carriers of typhoid fever. Although Drs. Herdman and Boyce found no typhoid bacilli in any of the oysters they examined, due partly at least to the fact that they did not succeed in obtaining any from beds known to be contaminated by sewage or suspected of typhoid, yet there was an abundance of other bacilli. Of these the various species of the colon group were most frequent and another intestinal denizen—the anaerobic bacillus enteritidis sporogenes of Klein—was often detected, while "non-human" bacteria swarmed.

The first group probably indicated sewage contamination, but the abundance of all species raises an interesting biologic question: What is the relation between the oyster and the numerous bacilli which it contains? Are the bacteria attacking the mollusc or is it collecting them for food purposes? Their presence may be due to mere accidental contamination, as with any other matters suspended in the sea water, but the frequency with which the colon group and the bacillus enteritidis were found would rather suggest some elective influence upon the part of either the oyster or the germs.

If the bacilli are the active party, they display but poor judgment, for the report shows that they undergo no increase in the tissue of the oyster and disappear completely in from one to ten days' time. On the other hand, we know that the oyster's favorite diet consists of just such minute organisms, both vegetable and animal, diatoms, confervæ, infusoria, etc., and that the whirling ciliæ upon the gills are for the sole purpose of keeping a constant current of water laden with these pouring into its mantle cavity. It is the pursuit of these miro-organisms which leads to the planting of the oyster in localities where there is danger of sewage pollution as the truth of the oysterman's adage, "the muddier the water the fatter the oyster," depends upon the greater abundance of vegetation "upon muddy bottoms with sluggish currents. The spat must be started in clear water, but at each transplanting the growing bivalve is brought closer in to shore, or even up into the brackish water of rivers and harbors, to reach the richer crop of bacteria, the only limit being the degree of muddiness which will clog the gills or bury the oyster in silt, and as Herdman and Boyce found that typhoid bacilli, experimentally introduced, were destroyed in the intestine of the oyster, and that when the latter was placed under favorable conditions for vigor, in a current of pure sea water, the bacilli disappeared in some cases within twenty-four hours and invariably within six or seven days, it seems highly probable that oysters can fatten on a diet of the pathogenic bacilli, as well as on other bacteria. So that we apparently have in the oyster itself a safeguard against the transmission of disease, although it would not be justifiable to trust to it in practice. Still, it is consoling to know, as seems clearly proven by the report, that valuable beds accidentally contaminated by sewage have the power of purifying themselves in a comparatively short time under favorable conditions.

Whether this mild bactericidal power is capable of development by careful selection to such a pitch as to render the precious bivalves practically useful in the purification of sewage and thus combine sanitation with luxury and profit, is a question for Utopia. This would indeed be "A sea-change, into something rich and strange." The experimental inoculation of oysters with typhoid bacilli was extensively carried out under various conditions, with the invariable results indicated above. In fact, when we consider that the regular food of the oyster consists of bacteria and other vegetable micro-organisms no way structurally different from the bacillus *typhosus*, and that his tissues are very far from affording the proper temperature conditions for the multiplication and attack, we could hardly expect it to be otherwise. Our danger would appear to come from eating the oyster before he has had time to digest the bacteria which he has collected for his meal. This view of the case magnifies the risk of pollution in one way, in that if germs are present in the water at all, the oyster is nearly sure to get some of them inside his mantle cavity. As they

may survive in his tissues for as much as ten days, it would, perhaps, be safer for us if he had no appetite at all for them. And yet it is highly improbable that in such an unfavorable culture-medium, which prevents them from multiplying, they could retain their virulence for a third of that time.

In addition, we have the safeguard that, as Herdman's experiments clearly showed, sea water itself is inimical to the bacilli. A few survived immersion in it for twenty-one days, but there appeared to be no multiplication of them in this medium from the moment they were placed in it; and this again we would have expected upon biologic grounds, inasmuch as no fresh-water organism, whether vegetable or animal, will survive abrupt transference into sea water, with the exception of a few fishes like the salmon, and while the natural habitat of the bacillus of Eberth, our own body-fluids, has a moderate degree of salinity, yet this is so far below that of sea water that the organism may be practically reckoned a fresh-water one, which classification is practically justified by its ability to live and multiply freely in wells, reservoirs and sluggish streams. The conclusion, then, seems clearly established that there is very great danger of pathogenic bacilli finding their way into oysters whose beds may be contaminated by sewage, even though but slightly, and that in consequence, as our authors recommend, the extent to which beds may be brought up rivers and harbors should be strictly controlled by law and all beds carefully patrolled by sanitary inspectors. All oysters brought in from suspected or uninspected beds, whether home or foreign, should be kept in quarantine in a current of pure sea water for at least a week or ten days, during which time they would probably purify themselves. On the other hand, we are entitled to count upon the side of safety, first, the inimical effect of sea water upon bacteria, and second, the destructive effect of the digestive fluids of the oyster itself. So that beds even near the mouths of polluted rivers, where the water was abundantly salt, would be comparatively safe; and all oysters kept alive under favorable conditions for a week or more, would be practically so.

So much for that part of the report dealing with the oyster as a passive medium in the transmission of disease. Are there any diseases of its own which may render its tissues unfit for food? Not the least interesting feature of the report is that dealing with one of these, the well-known "greening" of oysters. There are a number of conditions under which a more or less pronounced greenish tinge occurs in these bivalves. The soft, rounded "body" of many perfectly fresh healthy specimens will show such a tinge on account of the showing through of the large hepato-pancreas, which with the genital gland forms the bulk of this mass, and varies in color from a light sage to a deep grass green. Then there is the more vivid hue which marks the first stages of decomposition, next to the odor our most valuable danger-signal; and indeed, since Mrs. Grundy's absurd taboo upon "sniffing at table" has robbed our stomachs of their most faithful guardian, this hue of decomposition is our only protection. Then there is the more striking coloration chiefly affecting the palps and gills, known as "greening" proper, and of this our authors find that there are at least two distinct kinds. One of these is found in the oysters of certain parts of the French coast and of a few river-mouths in Essex, on the east coast of England. Curiously enough this particular greening, which is very vivid, instead of repelling the epicure, attracts him, and the "green oysters of Marennes" are esteemed a special delicacy and command a high price. They can only be grown in a few choice, carefully-protected beds near the district whose name they bear, and the greatest pains have been taken by the oyster growers to discover the secret of this color-feeding in order to transfer it to other beds. Some two or three years ago Ray Lankester investigated the matter and found the coloring to be due to the presence upon the surface of the oyster of enormous quantities of a tiny vegetable micro-organism containing chlorophyl, while the tissues of the mollusc were saturated with the pigment derived from eating these. To this pigment he gave the name *marennin*. In short, the oysters are simply green fat. These results Herdman and Boyce confirm in most respects and further report that this form of greenness is not accompanied by the presence of any excessive amount of either iron or copper, as proved by an elaborate series of most delicate tests. Consequently they pronounce the "*huitres de Marennes*" perfectly healthy, which is lucky for the epicures.

The other variety is, however, less innocent. This is a paler, duller tint which is found in some oysters from Falmouth, on the south coast of England, and in certain American oysters transplanted to English beds. In these a most interesting condition was present. First, quantitative tests showed a marked excess of copper in the tissues as a whole, and more in those parts which were greenest than in the colorless portions; also a slighter but still distinct excess of iron. Then this excess of both iron and copper was found chiefly upon the surface tissues of the body and in the leucocytes of the blood, which latter were markedly increased in number. In fact, the report describes the condition as a green leucocytosis. This sounds curiously familiar as it stands, and when we remember that copper and its salts play the rôle in the blood of invertebrates that iron and its salts do in that of vertebrates, we have at once a strikingly parallel condition to chlorosis and pernicious anemia in our own species: a loss of hemoglobin from the blood, an excessive deposit of iron in certain tissues, an increase of the white blood-cells. To make the resemblance more striking, the application of potassium ferrocyanid and other similar solutions brings out a striking blue or green reaction in the most affected portions of the tissues, just as in our own bone marrow, spleen and liver in pernicious anemia by the similar ferrocyanid test now in vogue. This copper saturation is not due to any mere excess of copper in the sea water, as our authors were entirely unable to produce any similar effects by prolonged cultivation of oysters in weak solutions of both copper and iron.

To find that "greening" of oysters is a near relation of our own "green-sickness," as chlorosis used to be termed in earlier days, is, to say the least, surprising. But the more carefully we trace the pedigree of any of our great metabolic degenerative changes, the longer it becomes. Gout can be clearly traced back to the bird-reptile, and the changes which underlie it, to the mollusc. The pearl is formed in the tissues of the oyster by precisely the same method that a stone is formed in the human or equine bladder. Oxaluria is a survival of the normal excretory processes of plants, and some species, such as begonias and sumacs, may even deposit it in sufficient quantities in their tissues to give rise to a diseased condition. Diabetes mellitus is a most complex and advanced condition, but certain plants, e. g., violets, suffer severely from a form of decay due to the presence of an excess of sugar in their sap. We are not half so original as we imagine, even in our diseases.

W. H.

ASSOCIATION NEWS.

Columbus Meeting.—We are informed that, including the Legislative halls, thirteen halls or places of meeting for the Sections have been provided, and are well adapted in size and location to the purpose. The Grand Opera House, which will seat 1700 people, has been leased for the general meetings, so that altogether we have fourteen places of meeting. No hall except the Opera House has as yet been assigned for a particular purpose, it being considered desirable to know something more concerning the members who will compose the Sections before assignment is made. The Section dinners have all been

arranged, and general and private entertainments are well under way. There has been adopted a local button which it is hoped may commend itself to the members of the ASSOCIATION, who can take it or purchase the regulation official button from those in charge, as they please. The hotel people are lending cheerful assistance, and have assured us that they can accommodate 2300 to 2400 guests, and that many more can be accommodated in flats, apartment houses, etc.

SOCIETY NEWS.

International Association of Railway Surgeons.—At the meeting of the executive board of this association, held in St. Louis, March 3, Richmond, Va., was selected as the next place of meeting of the association, and May 31 to June 2, the dates.

American Surgical Association.—The annual meeting of the American Surgical Association will be held in Chicago, May 31, June 1 and 2, 1899. Dr. W. W. Keen, Philadelphia, is president, Dr. H. L. Burrell, Boston, secretary.

Cuyahoga County Medical Society.—A meeting of this society was held in Cleveland, Ohio, March 2. The program included a paper by Dr. W. T. Corbett, on "Practical Notes on Diagnosis and Management of Smallpox," and one by Dr. P. H. Sawyer, on "Vaccination."

Eastern Hampden Medical Association.—At the recent annual meeting of this Association, the following officers were elected: President, Dr. W. A. Smith of Springfield; vice-president, Dr. George L. Woods of Springfield; secretary, Dr. Harry Merchant of Monson.

James Tyson Medical Society.—By special request, Dr. Matthew Woods of Philadelphia read his paper on "Some of the Minor Immoralities of the Tobacco Habit," before this society, at Huston Hall, University of Pennsylvania, at the last regular meeting.

International Antivaccination Congress.—This congress, to be held at Berlin in June, is characterized by a Berlin writer as "the greatest reactionary occurrence in the domain of science of the closing century." "Let us hope," he adds, "that the tuberculosis congress to precede it may pave the way, so that the coming century will witness the vanishing of tuberculosis from the world, as this century has witnessed the disappearance of smallpox!"

Cincinnati Academy of Medicine.—At the regular meeting of the academy, March 6, the annual election of officers resulted as follows: President, E. W. Mitchell; first vice-president, Elizabeth Campbell; second vice-president, Charles E. Caldwell; recording secretary, Robert Ingram; corresponding secretary, F. E. Cougler; financial secretary, Magnus Tate; treasurer, E. Allen; librarian, A. I. Carson; trustees, N. P. Dandridge, E. Gustave Zinke, John A. Murphy.

Columbus Academy of Medicine.—At the meeting of February 24, Columbus, Ohio, smallpox was the subject discussed. Dr. Probst, secretary of the State Board of Health, said the city ought to have the machinery ready at all times to stamp out any contagious disease and that systematic vaccination has never failed to eradicate the disease. He urged that free vaccination be given if necessary. The committee appointed to investigate the disease in this city reported that the cases were uniformly of a very mild type and that no deaths have occurred. The academy recommended effective measures by the city in the way of vaccination and quarantine to stamp out the disease.

Detroit Academy of Medicine.—At the meeting held February 28, Dr. P. N. Hickey read a paper on "Thoracic Tumors." Three cases of tumor of the chest cavity were reported. The diagnosis was in each case verified by autopsy, and microscopic slides of the tumors were shown by the projection apparatus, and microphotographs by the lantern. The cases were a secondary carcinoma of the pleura and lung following a cancer of the breast removed five years previously; a case of marked pleuritic effusion, in which 180 ounces of fluid were withdrawn in the course of a few days, and in which the effusion was found to have come from a pleural sarcoma, diffused through the left parietal pleura. The third case gave history of syphilis thirty years before. Physical examination showed a probable tumor of the mediastinum due to a gumma. Improvement occurred under iodid of potassium, but he succumbed to an intercurrent pneumonia. The microscope showed a degenerating gumma, with no cellular structure left.

Washington Medical Society.—At the recent meeting of the society, Dr. Chas. Richardson read an essay entitled "A Year's Work in Intubation." He reported some very interesting cases and showed that of thirty-two cases intubated, 35 per cent. recovered. Dr. de Schweinitz made a report of the bacteriologic examinations of the milk from the Pasteur laboratory since January, 1898. His report was favorable, and pointed out the possibility of pure milk where the methods were accurately carried out. Dr. Lamb presented pathologic specimens of, multiple hemorrhages from ulcers of ileum, one perforating one and one-half feet from the ileocolic valve; the patient, a domestic 17 years old, worked until four days of her death and was supposed to have had peritonitis; postmortem showed ulcers of two weeks' duration. It was a case of ambulant typhoid. He also presented a subject, 28 years old, showing red hepatization, splenic leukemia, infarctions of brain and atrophy of temporal lobes; and in a subject 80 years old, gray hepatization with abscesses, after an illness of four weeks' duration.

Orleans Parish Medical Society.—During 1898, two articles appeared in the *Phila. Med. Jour.*, (Vol. i, p. 22; Vol. ii, p. 1056), on fever following a typhoid attack, inexplicable except on the ground that the heat-controlling centers have not, in such cases, regained full control of the distribution of the energy resulting from tissue oxidation. Apropos of these, Gesner presented the following cases before this society, New Orleans, La., Feb. 25, 1899. Henry M., a sturdy boy of 15 years, of French parentage, was taken suddenly ill with fever on November 12; history of malaise for a period of eight or ten days previous was elicited, and the case soon proved to be a marked one of typhoid fever, the temperature reaching 105.4 degrees F.: the Widal test gave a positive reaction. Finally, on the fifteenth day of his confinement to bed, probably the twenty-fifth of his disease, the temperature reached normal. Although the condition of the boy was in every way excellent, the temperature again rose, reaching a maximum of 102.1 degrees on the sixth day after the drop to normal. A slight cough was present, without discernible physical signs; while constipation existed at first, its relief was not followed by the subsidence of the temperature; no tenderness could be detected about the abdomen or thorax or other portion of the body. Quinin sulphate was resorted to, 40 grains being given daily. After four days of this treatment the temperature still oscillated about the 100-degree mark. The patient was made to sit up, and his diet, which had been liquid up to this time, was increased by allowing soft-boiled eggs and crackers. The temperature quickly dropped, reaching normal on the fifth day. Convalescence was uninterrupted. In this case all possible local sources of febrile temperature had been excluded. It is probable that the explanation of the facts observed is the functional failure of the heat-centers; these are perhaps stimulated to a better performance of their duties by a greater activity on the part of the patient and a more generous diet.

New York County Medical Association.—At the meeting on February 20, Dr. Frederick Holme Wiggin, in his inaugural

address as president of the association, discussed "The Physicians' Code of Ethics," and took occasion to enlighten both physicians and the laity more fully regarding certain portions of the National Code of Medical Ethics—that body of rules which is popularly supposed to bind together the whole medical profession in an ironclad agreement. He disavowed any intention of stirring up old strifes, and claimed that he had selected this particular topic solely because, in his intercourse, not only with his professional brethren, but with various men of affairs, he had been impressed with the fact that certain very important parts of this subject were very generally misunderstood. For instance, only a few months ago a high official in the Homeopathic State Medical Society had told him that when the AMERICAN MEDICAL ASSOCIATION and its affiliated societies were ready to open their doors to those who held different views from the majority as to the action and dosage of drugs, he, for one, would be willing to leave his organization, discard his sectarian title and apply for membership. This gentleman, like many others, was not aware that years ago the AMERICAN MEDICAL ASSOCIATION had taken this very position. In spite of all that had been said since regarding the Code, the members of the medical profession in this country had lived under it in reasonable harmony from the organization of the AMERICAN MEDICAL ASSOCIATION in 1848 until 1882. In the latter year the first note of discord had been struck by the New York State Medical Society, which, at its annual meeting in Albany, had adopted a different code. As this was in direct violation of one of the by-laws of the National organization, the judicial council of the latter ASSOCIATION, by a unanimous vote, excluded the delegates of New York. As a result, the members of the profession residing in this State, who still desired representation in the National body, were constrained to organize the New York State, and the New York County Medical, associations. This division of the profession, with its resulting dissensions, was especially unfortunate, because it arose from a misunderstanding, and was, therefore, wholly unnecessary. The AMERICAN MEDICAL ASSOCIATION had endeavored to clear up any doubt upon the main question at issue—that of consultations with homeopathic practitioners—by adopting, in May, 1884, a series of resolutions, making clear the fact that the National code contained no provision in any wise inconsistent with the broadest dictates of humanity and the exercise of the most perfect liberty of individual opinion and practice, and that the true ground for declining professional fellowship with any class of practitioners was not a belief in any particular dogma, but the adoption of sectarian names as trademarks, and the formation of organizations antagonistic to the great mass of the medical profession. This action of the National body, Dr. Wiggin said, had certainly opened the door years ago for the return to the parent organization of the members of the New York State and County societies, and that the members of the county society now appreciated this fact, and occupied identically the same position, was evident from the inaugural address, in 1897, of its president, Dr. Arthur M. Jacobus, who, in speaking of certain sectarian practitioners, said: "If they will but drop the sectarian title for that of physician, pure and simple, and let the old and new school questions die out, I am sure we will welcome them with open arms." In closing, Dr. Wiggin said that although the local profession might be compelled to wander a few years longer in the desert of disorganization, it was fair to predict that early in the twentieth century a Moses would be found who would lead the profession into the promised land of union and strength. When that gladsome time should arrive when all educated physicians in this State would join hands, he hoped the larger and reorganized society would adopt, as its motto, a paraphrase of that of the famous Musketeers of Dumas—"The profession for the individual practitioner, and the individual practitioner for the profession."

BOOK NOTICES.

Degeneracy. Its Causes, Signs and Results. By EUGENE S. TALBOT, M.D., DD.S. With 120 Illustrations. London: Walter Scott, Ltd. 1898. New York: Charles Scribner's Sons.

This issue of the Contemporary Science Series, edited by Havelock Ellis, is by an American author, a Chicago practitioner of dentistry, whose previous writings in a less popular form have given him a cosmopolitan reputation as an investigator in the special field of human degenerative defects. In the present work he gives the general results of over twenty years of study, and follows up the history and the facts of degeneration as it is understood in the more limited and scientific sense. His book is not, like that of Nordau, a tirade against social, musical and literary fads and their originators, but is a judicial and readable *exposé* of the real and alleged causes of degeneracy, including under this head such agencies as atavism, intermarriage, race mixture, toxic agencies, and diseases, climate, soil, food, overstrain in school, and of the chief stigmata in the cranium, and the body generally, and ends with a discussion of mental and moral degeneracy and, like Nordau's book, with a chapter of "conclusions" that are rather encouraging than otherwise. Dr. Talbot evidently does not think that his subject is a national or racial danger. The fact that degeneracy is its own cure by the lack of reproductive capacity of its victims is one safeguard, and the further fact that its evil tendencies can be averted by proper training of the young is another.

A noteworthy feature of the work is that, while showing the widest range of reading in foreign authorities, it is especially complete in its references to American authorities, who, whatever their merits, are often overlooked in works of this class, by European authors. In this respect the work is a notable exception to the general rule. In all respects it is to be welcomed as a valuable contribution to a subject of wide general interest, in regard to which popular ideas are in a more or less hazy condition. As a semi-popular statement of some of the present aspects of the subject it is therefore likely to be of service.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B. A., M.D. New York & Philadelphia: Lea Brothers & Co. 1899.

The present volume, although a second edition, has been so thoroughly rewritten in the light of a more mature experience as to form, practically, a new work. The author's wide experience enables him to speak with authority, and much of the matter is provided from his own personal records. A marked conservatism pervades the work which, on the whole, is commendable. Concerning the value of the X-rays, he says: "While the X-rays have been of interest and value in showing details of certain fractures, especially at the wrist, elbow and ankle, yet it can not fairly be said that they have yielded much information of practical value which could not have been obtained by palpation. Probably their usefulness will be increased by improvements in methods and apparatus, but at present the information which they give needs to be sifted with great care from among many misleading appearances." This should be remembered particularly in medicolegal cases. The plates, which are quite numerous, are very good, and the illustrations well chosen. The work is timely, and a desirable one for the practitioner to have.

Lectures on Appendicitis and Notes on Other Subjects. By ROBERT T. MORRIS, A.M., M.D., New York City. Third edition, revised and enlarged. With Illustrations by Henry MacDonald, M.D. Cloth, pp. 185. New York: G. P. Putnam's Sons. 1899.

This volume is well printed, on excellent paper, and contains much of interest to the surgeon. Chapter I treats of preparation for operation, and materials; Chapter II, the "Appendix

Vermiformis Ceci;" Chapter III, "Appendicitis;" Chapter IV, surgical treatment of and subsequent notes on appendicitis, the attitude of ten physicians on appendicitis, impressions from ten patients, summaries of the etiology and pathology of appendicitis, the death-rate factors, symptoms, and operative methods. In the last chapter, he considers: "Action of Various Solvents on Gallstones;" "Influence of Remains of Embryonic Vitelline Duct in Production of Moist Navels, and of Eczematoid Inflammation about the Navel;" "Malignant Islands at the Navel with Malignant Disease of Abdominal or Pelvic Organs;" "A Last Resort Hernia Operation;" "Experimental Production of Ileal Intussusception with Carbonate of Sodium," etc.

Manual of Physiology. By G. N. STEWART, M.A., M.D. Edin., D.Ph. Camb. 3d. edition. Philadelphia: W. B. Saunders. 1898.

This work is essentially a text-book for school use, which fact determines its general plan, Its usefulness is by no means, however, so limited, and its presentation of well-digested modern results is very attractive, particularly in respect to its condensation. The conclusions are in the main judicial, which implies very much reservation. The trend of opinion, however, is well enough indicated to serve as a guide for all intelligent readers. The mechanism of vascular and respiratory action has, as usual, been alluring and not unduly enlightening. The discussion of "internal secretion" is brief, much to the point, and very important. Conclusions as to the kidney seem to us not quite sustained, but they are after all tentative. The short allusion to "urine in disease" is conservative, and fails to meet the mental process of clinical men half way. The chapter on metabolism, nutrition, and dietetics" is very instructive.

It is very unfortunate that the presentation of the "neuron,' in the discussion of the nervous system should be so at variance with the definitions of the neurologists, inasmuch as this conception is not only fundamental, but very clarifying.

The liberal use of experimental text; the adaptation to laboratory work, co ordinated with didactic; the extremely good type and form, make the work of great value, and one that every man would find, among his many, a favorite. While sharing the growing opinion that there are too many books on medicine published, we are disposed to welcome all such thoughtful contributions upon the most fundamental and important of medical topics.

Medical Work of Massachusetts Volunteer Aid Association During the Spanish War. Boards, pp. 51. Illustrated. Boston: 1898.

This volume appears to be a collection of reprints of articles from a weekly medical journal, having to do with the work of the Massachusetts Volunteer Aid Association during the recent war with Spain. It, however, lacks title-page, index and table of contents, and does not even bear the publisher's name. The several papers are by: Dr. Herbert S. Burrell; J. T. Byford; Drs. E. H. Bradford and J. T. Bottomley; W. H. Seabury; Miss C. W. Cayford; Drs. E. G. Brackett, W. H. Prescott, J. Booth-Clarkson, T. B. Shea, Myles Standish, J. B. Blake and F. G. Balch.

Practical Lessons in Fever-Nursing. Designed for the use of professional and other nurses, and especially as a text-book for nurses in training. By J. C. WILSON, A.M., M.D. Third edition, revised and enlarged. Philadelphia: J. B. Lippincott Company.

The popularity of this little work attests the fulfillment of the author's hope for its usefulness. It is written in an entertaining style, and from a practical standpoint, and the professional relation of the nurse to the physician is kept constantly in view. The present edition is brought up to date by special attention to etiology and prophylaxis, disinfection, the Brand method of bathing, serum therapy, the care of soldiers in camp and during transportation, and by a short article on the bubonic plague. This work is probably the best of the smaller text-books on nursing.

Archives of the Roentgen Ray. Edited by THOMAS MOORE, F.R.C.S., and ERNEST PAYNE, M.A., (Cantab). Vol. iii, No. 2, November, 1898. Paper. Illustrated. Pp. 63. London: Rebman Pub. Co., Ltd. Philadelphia: W. B. Saunders, 1898. Price, $1.00.

This number of the *Archives* contains the following plates: A needle in the spine, congenital absence of clavicles, central sarcoma of tibia, tubercular disease of ankle, rheumatic arthritis of hand, an American frog, fractures of patella.

PUBLIC HEALTH.

Scarlet Fever.—According to Chicago Health Department officials, scarlet fever has been epidemic in Chicago for two years and at the present time is widespread. Last year it was of a very mild form and the death-rate low, but the mortality this year has been above the average.

Smallpox.—The smallpox panic still exists in this country, and numerous sporadic cases are reported. As a rule, however, the public is getting over its disturbed condition in regard to the disease, and it seems generally to be of a mild type and easily controlled. In no part of the country is there anything like a serious condition.

Health in Michigan.—Reports for February give influenza, bronchitis, rheumatism, neuralgia and tonsillitis as the five most prevailing diseases. Compared with the preceding month, erysipelas and scarlet fever increased in area of prevalence and, compared with the average for February for thirteen years, scarlet fever and influenza were more prevalent and diphtheria, typhoid fever, intermittent fever, whooping-cough, remittent fever, measles, diarrhea and erysipelas less prevalent.

Health in Cincinnati.—The health report for the year 1898 shows the following causes of death: consumption, 642; pneumonia, 519; heart disease, 371; accident, 229; typhoid fever, 105; diphtheria, 51; croup, 22; dysentery, 80; influenza, 27; cerebrospinal fever, 17; measles, 12; scarlet fever, 8; whooping-cough, 68; cholera infantum, 73; cholera morbus 8; diarrhea, 30; enteritis, 75; bronchitis, 289; homicide, 20; suicide, 62. In all there were 5585 deaths, making the death-rate per thousand, 14.79.

Cerebrospinal Meningitis.—An epidemic of cerebrospinal meningitis is reported from certain sections of Texas, Kentucky, Missouri and Southern Indiana. In Evansville, Ind., there have been forty-eight cases since January, nearly half of them fatal. In Fort Worth, Texas, the situation is reported as alarming, thirty deaths occurring in one week (newspaper statement), while in Henderson, Ky., thirty-nine deaths occurred between February 1 and 25. So far the country districts have chiefly suffered, but some alarm has been excited in St. Louis and other large cities, more it seems from an apprehended than an actual epidemic.

Yellow Fever.—The *New Orleans Med. and Surg. Jour.*, in its March issue, editorially congratulates the people of Louisiana on the prospect of there being no recrudescence of yellow fever in that particular portion of the South this coming year. The reason for this is the extremely low temperature which that part of the country has undergone. The thermometer, it is stated, has ranged as low as 25 degrees below freezing-point, and the water-pipes, even when covered with asbestos packing, were burst by the extreme cold. From this exceptional climatic condition it apparently is just to infer that there will be no home-bred repetition of the yellow fever there the coming year.

Problem of Typhoid Fever.—In an address before the New York State Medical Society, recently, Osler traced the work of the American physician relative to typhoid fever, and laid special stress on the work done in certain States. For the solution of the problem he considers the one essential as the practical

conviction of the people until they shall do what Elisha asked of Naaman the Syrian—that they shall wash and be clean—that they shall scour the soil on which they live, and cleanse the water which they drink. The problem will be solved when: 1, every city in the Union has a supply of pure water (including ice), and is properly drained; 2, when suburban and rural hygiene is systematically organized. In many ways a city's danger is from the country. Infected milk, infected ice, infected oysters, and dirty health resorts account for a considerable percentage of the cases treated in the towns. Many of the State boards of health need a more efficient organization; all need larger annual appropriations. A bureau of public health should form an integral department of each State government, with which civic, county, township, town and village boards should be in close organic affiliation. The salaries of the health officers should be changed from the beggarly pittance, almost the rule, to sums which would warrant a demand on the part of the public that such officials should have modern training in sanitary science. Special courses should be offered in the medical schools, as is done in England, and even diplomas given. All this will come when the health of the people is made a question of public not of party policy. . . . The responsibility for the wide spread prevalence of the disease rests upon the wanton carelessness of the people. God's own country, with man's own back yards, and the devil's own cesspools, expresses the existing conditions. A three-fold duty devolves upon the members of our profession; 1, to preach cleanliness! cleanliness!! cleanliness!!!; 2, to give a loyal and willing support to the State health officials; and 3, to guard every case of typhoid fever as a center and possible source of further infection."

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Supervising Surgeon-General of the U. S. Marine-Hospital Service for the week ended March 4, 1899:

SMALLPOX—UNITED STATES.

Alabama: Antauga Co., February 24, smallpox present; Mobile, February 24, 4 cases; Montgomery Co., February 24, smallpox present.

Colorado: Denver, February 4–11, 2 cases, 1 death.

District of Columbia: Washington, February 23–28, 11 cases.

Florida: Jacksonville, February 11–18, 1 case; Key West, February 25, 3 cases; Pensacola, February 27, 3 cases.

Georgia: Savannah, 1 case, a soldier from Porto Rico, on steamer *Chester*.

Illinois: Cairo, February 23, 9 cases; Monmouth, February 23, 3 cases.

Indiana: Evansville, February 25, 1 case; Jackson City, February 24, 3 cases.

Kansas: Peabody, February 16, 56 cases, 7 deaths.

Kentucky: Louisville, February 16–23, 29 cases

Maryland; Baltimore, February 3–27, 2 cases.

Maine: Auburn, February 20, 4 cases; Lewiston, February 22, 1 case.

Nebraska: Omaha, February 4–18, 2 cases.

Rhode Island: Providence, February 17–24, 1 case.

Tennessee: Jackson, February 11–18, 9 cases; Memphis, February 11–18, 6 cases.

Texas: Alice, forty miles west of Corpus Christi, February 20, 20 cases.

Virginia: Alexandria, February 23–March 2, 20 cases, 1 death; Norfolk, February 21–24, 35 cases; Portsmouth, February 18–25, 36 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, January 21–February 4, 12 cases; Rio de Janeiro, January 6–13, 18 cases, 7 deaths.

China: Hongkong, January 15–21, 1 case.

Egypt: Cairo, January 22–February 4, 3 deaths.

Gibraltar: January 30–February 12, 2 cases.

India: Bombay, January 24–31, 3 deaths.

Mexico: Ciudad Porfirio Diaz, February 18–25, 4 cases; Mexico, February 10–17, 10 cases, 2 deaths.

Russia: Moscow, January 28 to February 4, 6 cases, 4 deaths; Odessa, February 4–11, 2 cases, 1 death; St. Petersburg, January 21–February 4, 4 cases, 2 deaths.

Turkey: Constantinople, December 31–February 15, 32 deaths; Smyrna, January 25–February 5, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, January 6–31, 28 cases, 20 deaths.

CHOLERA—FOREIGN.

India: Bombay, January 24–31 3 deaths; Calcutta, January 14–21, 30 deaths; Madras, January 21–27, 2 deaths.

Medical Practice in Illinois.—The following sections are from a bill drawn up by the secretary and attorney of the Illinois State Board of Health, and with the advice and consent of the chairman and members of the Legislative Committee of the State Medical Society. The bill was substituted at the meeting of the Judiciary Committee of the Senate last week, for the bill introduced by Senator Gardner, editorially referred to in the JOURNAL of Feb. 11. This action was rendered advisable and necessary by the fact that intense opposition had been manifested to the passage of the original bill, opposition emanating not only from those who invariably oppose legislation of all kinds, but from the licensed physicians of the State, who objected strenuously to the clause requiring a renewal of their licenses each year. It could be seen also that the possibility of the bill receiving favorable consideration was jeopardized by the section requiring all applicants to possess diplomas, and both in the Senate and House the creation of "new boards" was looked upon with disfavor. Furthermore, those who had approached the members of both houses on this subject had little difficulty in determining that no new medical legislation would receive consideration unless "those who did not give medicines" were allowed an opportunity to prove their qualifications to the Board. The amended bill was a surprise to the committee and an unpleasant shock to the "antis," who had assembled in large numbers, loaded with arguments against the original measure. The substituted bill, free from the principal objections to be brought forth, left little or no ground for argument, except from those who believed in no legislation.

SECTION 2.—No person shall *hereafter* begin the practice of medicine or any of the branches thereof, or midwifery, in this State, without first applying for and obtaining a license from the State Board of Health to do so. Applications shall be in writing, and shall be accompanied by the examination fees hereinafter specified, and with proof that the applicant is of good moral character. Applications from candidates who desire to practice medicine and surgery in all their branches, shall be accompanied by proof that the applicant is a graduate of a medical college or institution in good standing as may be determined by the Board, or that he has attended at least two full courses of lectures in such medical college or institution, of at least twenty-six weeks each, no two courses being in the same year, and has passed all examinations in the studies, and performed all laboratory work and dissections embraced in the curriculum of the courses attended. When the application aforesaid has been inspected by the board and found to comply with the foregoing provisions, the board shall notify the applicant to appear before it for examination, at the time and place mentioned in such notice. . . . The examination of those who desire to practice medicine and surgery in all their branches shall embrace those general subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine by reputable medical colleges in the United States. The examination of those who desire to practice midwifery shall be of such a character as to determine the qualification of the applicant to practice midwifery. The examination of those who desire to practice any other system or science of treating human ailments, who do not use medicines internally or externally, and who do not practice operative surgery or obstetrics (the science of midwifery), shall be in the following branches only, viz.: anatomy, physiology, physiologic chemistry, pathology, histology and gynecology, provided that those who practice ophthalmology exclusively shall be examined in the branches embraced in the curriculum of reputable colleges of ophthalmology. . . .

SEC. 4.—Every person holding a certificate from the State Board of Health shall have it recorded in the office of the clerk of the county in which he resides within three months from its date, and the date of recording shall be endorsed thereon. Until such certificate is recorded as herein provided, the holder thereof shall not exercise any of the rights or privileges conferred therein. Any person removing to another county to practice, shall record the certificate in like manner in the county to which he removes, and the holder of the certificate shall pay to the county clerk the usual fee for making the record. The county clerk shall keep, in a book provided for the purpose, a complete list of the certificates recorded by him, with the date of issue of the certificate. The register of the county clerk shall be open to public inspection during business hours.

SEC. 5.—The fees for examinations shall be as follow: $10 for examination in medicine and surgery, and $5 for a certificate if issued; $5 for an examination in midwifery and $3 for a certificate if issued; for all other practitioners $10 for an examination and $5 for a certificate if issued.

SEC. 6.—The State Board of Health may refuse to issue the certificates provided for in this act to individuals who have been guilty of the practice of criminal abortion, who have been convicted of a crime involving moral turpitude or who have by false or fraudulent representations or advertisement, obtained or sought to obtain practice in their profession or by the false or fraudulent representation of or advertisement of their profession have obtained or sought to obtain money or any other thing of value, or who advertise under names other than their own, or for any other unprofessional or dishonorable conduct.

SEC. 7.—Any person shall be regarded as practicing medicine within the meaning of this act, who shall treat, operate on or prescribe for any

physical ailment or any physical injury to or deformity of another. Provided, that nothing in this section shall be construed to apply to the administration of domestic or family remedies in cases of emergency, or to the practice of dentistry or of pharmacy. And this act shall not apply to surgeons of the United States Army, Navy or Marine-Hospital Service in the discharge of their official duties.

SEC. 8.—That any itinerant vendor of any drug, nostrum, ointment or appliance of any kind intended for the treatment of disease or injury, who shall vend or sell such drug, nostrum or appliance, or who shall by writing or printing, or any other method, profess to the public to cure or treat disease or deformity by any drug, nostrum or application, shall pay a license of $25 per month into the treasury of the board, to be collected by the board in the name of the People of the State of Illinois for the use of said board. And it shall be lawful for the State Board of Health to issue such license on application made to said board, said license to be signed by the president of the board and attested by the secretary with the seal of the board; but said board may, for sufficient cause, refuse said license. Any such itinerant vender who shall vend or sell any such drug, ointment, nostrum or appliance, or who shall, by writing or printing, or any other method, profess to cure or treat disease or deformity by any drug, nostrum or appliance, without a license so to do, shall be deemed guilty of a violation of this section, and upon conviction shall be subject to the penalties hereinafter provided. . . .

SEC. 9.—Any person practicing medicine or surgery or treating human ailments in the State without the certificate issued by this board, in compliance with the provisions of this act, or any itinerant vender violating the provisions of Section 8 of this act, shall for each and every instance of such practice or violation forfeit and pay to the people of the State of Illinois, for the use of the said State Board of Health, the sum of $100 for the first offense, and $200 for each subsequent offense, the same to be recovered in an action of debt before any court of competent jurisdiction, and any person filing or attempting to file as his own the diploma or certificate of another, or a forged affidavit of identification, shall be guilty of a felony, and upon conviction, shall be subject to such fine and imprisonment as are made and provided by the statutes of the State for the crime of forgery. Provided, that all persons who have been practicing medicine continuously for ten years within the State prior to the taking effect of the act to which this is a second amendment, and who have not under said original act, obtained a certificate from the said Board of Health to practice medicine in this State, shall upon proper application to said Board of Health receive such certificate, unless it shall be ascertained and determined by said Board of Health that the person so applying for a certificate is of immoral character, or guilty of unprofessional or dishonorable conduct, in which case the said board of health may reject such application. And, provided, that such application for a certificate shall be made within six months after the taking effect of the act to which this is an amendment, and all persons holding a certificate on account of ten years' practice, shall be subject to all the requirements and discipline of this act, and the act to which this is an amendment, in regard to their future conduct in the practice of medicine the same as all other persons holding certificates, and all persons not having applied for or received such certificate within six months after the taking effect of the act to which this is an amendment, and all persons whose applications have for the causes herein named been rejected or certificates revoked, shall, if they shall practice medicine, be deemed guilty of practicing in violation of law and shall suffer the penalties herein provided.

NECROLOGY.

EDWARD P. HURD, M.D., Newburyport, Mass., died February 24, aged 60 years. Dr. Hurd was educated at St. Francis' College, Richmond, and the McGill Medical School at Montreal. He began the practice of medicine at Danville, P. Q. In 1870 he settled in Newburyport. For two years he served as a member of the school committee, and for seven years was a director of the public library. From 1871 to 1881 Dr. Hurd was one of the city physicians, and when subsequently the law providing for the appointment through the mayor went into effect, Dr. Hurd was appointed by Mayor Hale, and served as city physician till 1885. In 1893 he was appointed medical examiner for the 3d Essex district, and the same year he became pension examining surgeon for Newburyport and surrounding towns. He was also for two years president of the Essex Medical Society. Dr. Hurd had been professor of pathology and dermatology of the College of Physicians and Surgeons, Boston, for several years, and was also a registrar of the college.

JOHN EDMUND WARD, M.D., Royal College of Surgeons, Eng., 1868, son of the late Dr. Joseph Ward, Epsom, Eng., died at his home, Coney Island, N. Y., February 25.

DANIEL F. HARKINS, M.D., died at Allentown, Pa., February 27, as the result of a sand-bagging in New York City, several weeks before, while a physician at Blackwell's Island.

CLIFTON S. GRAY, M.D., St. Louis Medical College, 1872, Little Rock, Ark., died February 14, aged about 49 years. He was a native of Missouri, a member of the Arkansas State Medical and the AMERICAN MEDICAL ASSOCIATION, and was well known throughout his section of country, chiefly as an authority on diseases of the eye and ear.

HAYDEN NICHOLS, M.D., Long Island College Hospital, 1893, died at his home in Brooklyn, N. Y., March 4. He was born in Connecticut but had practiced most of his profession in Brooklyn, ill health compelling his retirement about two years ago.

EDWIN D. POWERS, M.D., died at his home in LaFayette, Ind., on February 15. He was born in 1827, and at the conclusion of his academic studies, at the age of 19 years, began qualifying himself as a physician in the office of an uncle, the late Dr. N. C. Powers of Syracuse, N. Y. His professional college training was obtained in Geneva Medical College, and he did his first work as a practitioner of medicine in Oswego, N. Y. He came to LaFayette for residence and practice in 1859.

PHILO L. HOLLAND, M.D., Chicago, died March 2, of pneumonia. Dr. Holland was a graduate of the Northwestern University Medical School, and for a time was associated with St. Luke's Hospital medical staff.

FRANKLIN WHITING BRIGHAM, M.D., Harvard, 1865, Shrewsbury, Mass., died of pneumonia, February 28. . . . E. A. Bunton, M.D., Greensfork, Ind., February 27, aged 52 years. . . . Horace C. Deane, M.D., Univ. Med. College, N. Y. City, 1886, N. Y., February 28, aged 35 years. . . . O. J. Howard, M.D., Elgin, Ill., February 25, aged 83 years. . . . Lee Kahn, M.D., Leadville, Colo., Rush Medical College, 1889, February 26, aged 32 years. . . . Stephen D. O'Brien, M.D., Kalamazoo, Mich., March 2, aged 38 years. . . . John E. Prichard, M.D., Baltimore, Md., March 1, aged 64 years.

MISCELLANY.

Successor Appointed.—Professor Garre has been appointed chief of the surgical clinic at Basle, to succeed the late Professor Socin.

Dr. H. T. Clough.—The new head of the department of diseases of the eye and ear at the Bangor (Me.) General Hospital, is Dr. H. T. Clough of Portland, Me.

Dr. Benson Ill.—We learn that Dr. John A. Benson, professor of physiology at the College of Physicians and Surgeons, Chicago, is critically ill.

Dartmouth Medical College.—The 101st annual commencement of this school was held recently, a class numbering twenty-five being graduated in medicine.

Christian Science.—On March 7, both houses of the Legislature of Oklahoma passed a bill prohibiting practice of Christian Science, but the same was vetoed next day by the Governor, as infringing on personal liberty.

Recurring Purpura and Anal Hemorrhage.—The *Bulletin Méd.* of January 4, relates the case of a man of 46 years who has a hemorrhage from the anus recurring regularly every month, simulating the menses, accompanied by patches of purpura.

Assistant at Longview Hospital.—Dr. J. W. Mann of Newtonville, Ohio, has been appointed successor to Dr. Frank Anderson as assistant physician at Longview Hospital, Cincinnati. The latter will locate at Decatur, Ill.

Central Medical College.—The commencement exercises of this St. Joseph, Mo., school were held March 1, and the degree of M.D. conferred on thirteen. The faculty address was given by Dr. S. F. Carpenter.

Hospital Name Changed.—The Assembly, in session at Albany, N. Y., has passed a bill changing the name of the New York Cancer Hospital to the General Memorial Hospital for the Treatment of Cancer and Allied Diseases.

Welcome for Dr. Fowler.—Dr. George B. Fowler, New York City, who was surgeon-in-chief of the army corps commanded by Gen. Fitzhugh Lee, was the guest of honor at a dinner recently given by a number of his professional friends. He has resigned his place with the corps, which is now in Havana, and has returned to his private practice.

Dr. L. P. Barbour.—Dr. L. P. Barbour, who for several years has been professor of obstetrics and of physical diagnosis in the University of the South, and lecturer on tubercular diseases, University of Tennessee, has resigned these positions and removed to Boulder, Colo.

St. Luke's Hospital.—The thirtieth anniversary of Dr. S. J. Jones' connection with this Chicago institution, as oculist and aurist, occurred March 4. Dr. J. E. Owens has been with the hospital thirty-two years, and Dr. I. N. Danforth, now an honorary member, twenty-five years.

Legislation in Kansas.—The House, in session at Topeka, by a vote of 43 to 23, has defeated the bill relating to the practice of medicine in that State, but has passed the Senate Insane Asylum Bill, providing for the erection of a new asylum at a place to be selected by a commission, appropriating $100,000 to begin it.

Pittsburg Physicians Visit Chicago.—A party of Pittsburg, Pa., physicians visited Chicago recently for the purpose of inspecting certain of the office structures of Chicago, and recommending any alterations in the plans of the architects commissioned with the reconstruction of the edifice tenanted by them in Pittsburg. Drs. W. F. Robeson, E. W. Day, J. R. Vincent, T. C. Christie, T. M. McKennan and J. S. Mabon were of the number.

Mumps with Enlarged Spleen.—Before the Harveian Society of London, Ewart (*Med. Press. and Cir.*, February 15) has reported a case of mumps in a boy of 13 years, otherwise healthy. The boy was admitted into the hospital on the third day of the attack, with the characteristic swelling of the left parotid. The affection remained limited to the left side and ran a mild course without pyrexia, the only complication being an enlargement of the spleen, which persisted for several days, gradually subsiding as the parotid became of normal size.

Serum Cure for Pneumonia.—A special cable dispatch to the *Chicago Tribune*, March 2, states that Professor Wasserman, one of Koch's ablest pupils, announces his belief that he has obtained a serum curative for pneumonia. Inoculation experiments with pneumonia germs in rabbits, produced a serum that cured the disorder in mice. Investigations further revealed the fact that the antitoxin is produced in the red marrow of the bones, and that serum derived from this substance from a human subject is also effective in mice.

Hospitals.—St. Anthony's Hospital, Columbus, Ohio, reports, for 1898, 1076 patients treated, 705 medical and 209 surgical cases. During the year 860 patients were discharged, 48 died, 168 remained at the close of the year. . . The Presbyterian Hospital, Chicago, has received $5000, from Mrs. S. P. McDivitt, for the endowment of a bed to be known as the Mary Day McDivitt bed. . . St. Joseph's Hospital, Joliet, Ill., has received $200, bequeathed by the late Mrs. J. Braun. . . The heirs of the late Thomas Newbury have sent $5000 to the Morton Hospital, Taunton, Mass.

A Doctor's Strange Fees.—A correspondent has sent us an extract from a letter received from his brother, a medical missionary in Sechuan, one of the inland provinces of China. "I had," he writes, "a very distinguished patient this afternoon. She is the wife of Sai-Tai of Tien-Tsin, in Chih-Li Province, a man who governs an area probably equal to half a dozen English counties. She brought her fee with her; a fowl, a duck, sixty eggs, two pounds of cakes and a leg of mutton! Last time she came she brought not quite so much, but since then she has sent over eight stocks of beautiful chrysanthemums."—*British Medical Journal.*

Bromoform Intoxication.—A child between 4 and 5 years of age, drank five grams of bromoform prescribed for his whooping-cough. Half an hour later he had coffee, bread and jelly for his supper, when suddenly he became unconscious, pulse 70, no reaction to stimulations, lower extremities ice cold. An injection of camphorated oil, with frictions, improved the pulse, but the stomach-pump was not obtained for over an hour, when the attempts to introduce the sound produced a coughing spell with vomiting, and the little fellow commenced to improve and was quite restored by the close of the next day. —*Munich Med. Woch.*, January 31.

Northwestern University Women's Medical School.—Dr. Marie J. Mergler, Chicago, has been made dean of this institution, to succeed Dr. I. N. Danforth, who has been given the honorary title of dean emeritus, in recognition of his long and eminent services to the school. The yearly course at this school has been changed from one of two semesters to one of four semesters of twelve weeks each, commencing the first of July, October, January and April. Three semesters will be required; the other semester will be optional. The number of regular students will be limited to 125 in each class. They will be admitted to competitive examination for place in class only after having complied with the requirements of the State Board of Health.

Chronic Abscess of Soft Palate with Calculi.—A. Raoult of Nancy recently operated on an abscess that had evidently developed from retention of the secretions of the tonsils in one of the cavities above the tonsils, which had become nearly closed by inflammatory adherences. The suppuration had extended into the body of the soft palate and produced a supplementary cavity in which several calculi were discovered, containing 61 per cent. mineral matters to 39 organic (33 of fatty substances). Leptothrix were also found in them. Nine cases of similar chronic abscesses are on record, but none with calculi formation. Patients complain of sensitiveness and fetid breath, but the pain is not excessive unless the abscess is very large.—*Rev. Hebd. de Laryng.*, February 4.

Pneumococcemia in Fibrinous Pneumonia.—Bianchi has examined the blood of twenty-seven children affected with pneumonia, and had positive results in 47 per cent. of the cases of pneumonia and in 30 per cent. of the cases of bronchopneumonia. Anterior infections diminishing the resistance, do not seem to be necessary. The presence of the microbe in the blood does not imply a more serious prognostic as long as there are no grave complications in other organs. These complications do not seem to be closely connected with the septicemia; nephritis, for instance, may occur with or without infection in the blood. The virulence of the microbe has no prognostic significance. In bronchopneumonia the passage of the microbes into the blood is noted even in cases that terminate in recovery. —*Rev. Gén. de Path. Int.*, February 5.

Shock.—In the *Med. News*, February 25, Dawbarn considers five points to be especially observed of the treatment of shock by "the free use of intravenous, hot, saline infusion": 1. The place of entrance, which in most cases is the median basilic vein, occasionally a vein in the operating-wound, while, where speed is not a factor, the rectal route is an excellent one. 2. As to the solution, it should be the so-called normal, really decinormal, salt solution, which is six parts of common table salt per thousand, boiled and filtered; roughly, a heaped teaspoonful to the quart. 3. The solution should be as hot as can be borne by the hand, about 120 degrees F. 4. In the adult, the amount should never be less than a liter, often two, and occasionally three, always injecting slowly. 5. The time occupied introducing the fluid into a vein should never be less than ten minutes to the liter.

Bone Marrow the Seat of the Immunizing Substance.—M. Wassermann has established, by experiments on rabbits, that the seat of the immunizing substance is the marrow of the bones, in infection with the pneumococcus. It is found later, after four

or five days, in the blood serum. The fact was confirmed by the discovery of marked immunizing power in the marrow from the femur of a patient dying with pneumonia. He has been unable yet to determine any relations between the strength of the immunizing power and the number of polynuclear leucocytes, according to Ehrlich's statements in regard to the leucocytosis that occurs in pneumonia.—*Munich Med. Woch.*, February 14.

Disinfection of War Relics.—The Illinois State Board of Health, it is said, is preparing what may be a timely circular in regard to the possible introduction of disease through war relics from the late Spanish-American possessions. The release of some thousands of ex-soldiers from service in those regions where smallpox, as well as yellow fever and other diseases, is endemic, each one of whom is likely or almost certain to bring with him some undisinfected relic of the late war, constitutes an actual danger that it is well to have guarded against. The circular, it is stated, will embody the regulations laid down by the board in regard to such articles, and will call upon local health officials to see that they are enforced. It will be well if its contents can be made as public as possible, and also if the same plan could be carried out in other States besides Illinois.

The Influenza Bacillus.—Since the publication of the article on the "Bacteriology of Influenza" (vide JOURNAL, p. 502) the Department of Health, Chicago, advises that the Canon-Pfeiffer bacillus has been identified in the bronchial mucus of a number of patients presenting the characteristic symptoms, especially as to glandular swelling, pain and stiffness of the sternocleido and temperature. These symptoms have, however, not usually lasted more than three or four days, when the swelling and soreness subside and the temperature falls to normal. Coincidentally with this subsidence of the paretic symptoms there has, in some cases, occurred a sharp intestinal disturbance with, in two instances, peritonitis and dysentery. All the cases reported have been among adults, and none have thus far resulted fatally.

Illegitimate Criticism (?)—One of our esteemed contemporaries, in a notice of Dr. Talbot's recent work on "Degeneracy," uses the following language: "Reasons drawn from analogy rather than homology are frequently used to prop up an argument, and the say-so of many men, some of whose statements would not be believed under oath, is frequently used to point a moral or adorn a tale." It is unfortunate for the numerous scientific authorities whom Dr. Talbot has so frequently quoted in his work that this sort of indefinite libel has been allowed to appear in a book notice in so respectable a journal as the one to which we refer. Who are the "many" whose statements would not be believed under oath? The matter is of some interest, and we might ask whether it is considered in the order of legitimate scientific criticism to make such statements.

Transmission of Typhoid Agglutinating Power.—At a recent meeting of the Société médicale des Hôpitaux, Mosse and Frenkel (*Lancet*, February 4, p. 341) presented a communication in which it was maintained that the power of the blood to cause agglutination of typhoid bacilli can be transmitted from the mother to the fetus through the placenta. This power has been found in a full-term child born of a mother who has passed through an attack of typhoid fever during pregnancy. This power is feebler in the infant than in the parent and grows progressively more so. The transmission depends in part upon the activity of the agglutinating power of the mother's blood and the length of time during which the fetus has been exposed to its influence. The secretion of the mammary also possesses agglutinating power, but in a much less active degree than in the blood. It also is influenced by the agglutinating activity of the mother's blood and the duration of the condition.

Spasm of Tensors of Vocal Chords.—Rhodes (*N. Y. Med. Jour.*, February 25) presents five cases from which he concludes that the disease is of neuropathic origin, probably located in the motor areas of the medulla. The essential points in diagnosis are the spasmodic action of the laryngeal muscles on attempt at phonation, with production of the characteristic voice, but more or less perfect condition of the parts on laryngoscopic examination. The prognosis is unfavorable, few being cured or much relieved. Prolonged rest for the voice and a general tonic course of treatment for the nervous system are indicated. Such nervine and general tonics as strychnin, arsenic, valerian, potassium bromid, quinin, iron, etc., are suggested. Electric treatment has seemed to give relief in some cases. Astringent and sedative local applications have been used with some benefit, and the results in Oltuzewski's cases would indicate that any abnormal conditions in the nose and upper air tract should be relieved.

Thyroid Gland in Pregnancy.—M. Lange has been studying this subject for five years, examining over three hundred pregnant women. Hyperplasia of the thyroid gland is a physiologic phenomenon of the pregnant condition, and administration of thyroid extract reduces the size of the gland, indicating that it is not mere hyperemia, but an actual increase in the size of the gland. He never found the hyperplasia in cases of "pregnancy nephritis," but it accompanied two cases of chronic nephritis. Iodothyrin has an unmistakable effect on pregnant women, increasing the diuresis and diminishing the amount of albumin in the urine. He also established the fact that extirpation of four-fifths of the thyroid gland in cats with young resulted in tetanus, which subsided with the administration of iodothyrin. Extirpation of a portion which would not affect a non-gravid cat caused a renal affection with convulsions in some cases, not yielding to iodothyrin.—*Ztft. f. Geb. u. Gyn.*, xl. 1.

Neoplasm in Trachea.—P. v. Bruns reviews 147 published observations, noting that 102 were benign, including 23 fibrous polyps and 33 papillomata. Sarcoma occurred in 14 cases—some very slow in developing, extending over twenty years—few very malignant. Primary carcinoma was more frequent: flat and infiltrated in some cases; knobby and circumscribed in others, and again papillary. In a few cases—one personally observed—there was carcinomatous degeneration of intratracheal goiter. The posterior wall is usually the location. Infection of the lymph-glands and metastases are rare. The period from the first disturbance in breathing to the end varied from a month to two years. In the trachea, 30 per cent. of the neoplasms are malignant; in the larynx, only 12.6 per cent. In a few favorable cases the neoplasm can be removed from above, but generally the only procedure is extensive tracheofissure, introduction of a tampon-canula, extirpation and cauterization of the wound. Bruns resected the trachea in one case; the patient lived six years afterward.—*Cbl. f. Chir.*

Functional Capability of Fattily Degenerated Heart.—As the result of a clinical and experimental study, Hasenfeld and Fennyvessy (*Berlin. klin. Woch.*, 1899, Nos. 6, 7) express the opinion that even considerable degrees of acute fatty degeneration of the myocardium may escape diagnosis during life because the degeneration does not appreciably interfere with the functions of the heart and gives rise to no noteworthy cardiac symptoms. The functional capability of the acute fattily degenerated myocardium—and not alone with slight but also with considerable degrees—does not suffer in marked manner. The acute fattily degenerated myocardium is, like the normal myocardium, capable of meeting not only the ordinary demands upon it, but also extraordinary demands. Only shortly before death were signs of compensatory failure observed in animals in which fatty degeneration of the heart was induced by phosphorus poisoning. Even under these circumstances the profoundly degenerated heart was still susceptible of stimulation with adrenal

extract. The myocardium in animals poisoned with phosphorus is much more sensitive than the normal to want of oxygen. The failure of circulation in such animals is largely attributable to vasomotor weakness. Pregnant animals bear phosphorus poisoning badly; the parenchymatous organs of the fetus in utero also undergo fatty degeneration.

Tuberculosis of the Aorta.—Apart from such invasion as may take place by invasion from adjacent disease, tuberculosis of the blood-vessels is an exceedingly uncommon condition. In any event it is always secondary infection taking place either through the vasa vasorum or by implantation. Arteries or veins may be attacked, and smaller vessels with rather less rarity than large ones. Blumer (*Am. Jour. Med. Sci.*, January, 1899, p. 19) reports two cases in which tuberculous nodules were present in the aorta. One occurred in a colored man, 45 years old, in whom, in addition to chronic tuberculosis, peritonitis and widespread acute miliary tuberculosis, three pinhead-sized nodules were found in the descending aorta above the diaphragm, which exhibited typic histologic appearances and evidence of tubercles. The second case was in a woman, 50 years old, who presented tuberculosis of various organs together with a pinhead excrescence in the descending aorta, which on examination proved to be a tubercle. In both cases the aortic infection was presumed to have taken place by implantation, as the media of the vessel was uninvolved.

Venous Thrombosis Complicating Pulmonary Tuberculosis.—In a study of the records of the medical clinic of Professor Gerhardt at Berlin, Ruge and Hierokles (*Berlin Klin. Woch.*, 1899, No. 4, p. 73) found among 1778 cases of pulmonary tuberculosis 19 instances of venous thrombosis. The patients varied widely in age. There were 6 between 20 and 30 years old, 7 between 31 and 40, 5 between 41 and 50; one patient was 60. Twelve were women and 7 men. All were grave cases, death occurring within one or several months. The thrombosis occurred on an average two or three weeks before death. The following vessels were affected: The left crural vein in 3, the right crural vein in 1, the left iliac and crural veins in 2 (in 1 including also branches of the internal mammary vein), the right iliac and crural veins in 1, the left crural and the right saphena in 1, the right saphena in 1, the right and left basilic in 1, the left renal in 1, the prostatic plexus in 1, the superior longitudinal sinus in 1, the right ventricle of the heart in 4, the right pulmonary artery in 2.

Semeiologic Significance of the Fat of Stools.—As the result of a clinical investigation, Katz (*Wiener Med. Woch.*, 1899, Nos. 4, 5, 6,) reaches the conclusion that a diminution in the fatty acids and fatty soaps contained in the fat of the stools below 70 per cent. of the total amount of fat is indicative of diminished or abolished activity of the pancreatic juice. The diminution in fatty metabolism appears to be more pronounced in connection with acute than with slowly developing changes in the gland. The applicability of this symptom appears to be wanting only in nursing children and in the presence of profuse diarrhea, a weakened pancreatic juice being secreted in the first condition and not sufficient time for the activity of the juice to manifest itself being permitted in the second condition. Diminished fatty metabolism in cases of diabetes and of icterus is indicative of participation of the pancreas in the disease process.

Teratologic Specimens Desired.—The pathologic department of Rush Medical College solicits contributions of teratologic specimens for the museum. The teratologic series of the museum is now the best in the northwest, and it is desired to still further improve it. Specimens of monstrosities and gross malformations, both human and animal, will be carefully dissected and marked with the donor's name, a copy of the photograph and of the dissection notes will be sent him and due credit will be given him in any publications which utilize the specimen. It is desired that the fresh specimens be sent, if possible, or that they may be preserved in a 5 per cent. solution of formalin, or in a 50 per cent. solution of alcohol. Transportation charges will be paid by the college. The recording of any clinical facts in connection with the birth of the monster, will add to the value of the contribution. Communications may be addressed to Dr. L. Hektoen, Rush Medical College, Chicago, or to Dr. H. F. Lewis, 4426 Lake Ave., Chicago.

Alkaline Glass in Test-tubes, Etc.—The following item has some interest to medical practitioners who utilize the methods of clinical diagnosis. A German chemist, according to the *Scientific American* (February 18), calls attention to the product of certain German glass manufacturers engaged in making chemic apparatus. Test-tubes, etc., are sent out by these parties made of glass so strongly alkaline as to cause at once the reaction to the ordinary tests. It is evident that such apparatus might be the cause of many serious errors in clinic manipulations and diagnosis, and it would be advisable for physicians to test the reaction of their test-tubes, beakers, etc., before utilizing them. The glasses are of good quality and well made, but this defect seriously impairs or annuls their value. In nothing is perfect accuracy and reliability more essential than in chemic or diagnostic apparatus.

The Occupation Diseases of Commercial Travelers.—A writer quoted by the *N. Y. Med. Jour.* (February 25) from the *Archives de Neurologie*, "thinks that the exciting life of a commercial traveler is very likely to lead to neurasthenia, not only from irregularities incident to such a life, but also from the fact that the traveler has constantly to deal with great numbers of strangers." There is no doubt much truth in this, but all of the causes are not fully stated in the brief abstract given. Commercial travelers are, as a rule, more or less irregular in their habits. The habit of traveling by night and working by day, which may not be a practice of European drummers, but is general in this country, is especially adapted to bring on nervous exhaustion. Still more, however, could be said as to the irregular lives of many of these travelers and the dangers to which they make themselves subject. It has been noted in asylums that a very large proportion of the paretic dements were of this class, and of the female paretics many were the wives of this class of commercial travelers. The constant jarring of the cars has also been attributed, many years back, as the cause of tabes, and it is possible that this may be a very favoring condition for the bringing on of that other serious affection. The pathology of commercial traveling is really an important matter and should be studied more fully.

Longevity of Lunatics.—The *Lancet* of February 18 calls attention to the case of a patient who recently died at the Broadmoor Criminal Asylum, at the age of 84, after fifty-five years in confinement. It also quotes from Blandford (Twentieth Century Practice) in regard to similar instances of longevity with prolonged duration of asylum life, and remarks that the economic and financial data of asylums as regards lunatic longevity ought, if available, to prove highly interesting. There is nothing very remarkable in the fact that some patients endure the conditions of modern asylum life to an advanced age; the regular, undisturbed mode of living, the absence of care, the careful medical and hygienic oversight, all favor longevity, and it has also to be remembered that these cases are the outcome of a process of natural selection from an infinitely larger number. Asylum populations rapidly change as a whole, but there are always a few who survive what one might call many generations of their fellows. The economic problems are, therefore, not likely to be as serious as the *Lancet's* editor seems to think; the few striking instances of longevity are but a fractional percentage of the whole number of lunatics in public asylums. In private institutions, such as that referred to by Blandford, they are likely to be more numerous, but the financial questions there involved hardly interest the general public.

Germicidal Properties of Blood Serum.—In the *Boston Med. and Surg. Jour.*, February 23, White presents the results of experiments in the Massachusetts General Hospital, and draws the following conclusions: 1. Human blood serum differs greatly in its germicidal action upon various kinds of bacteria. 2. The experiments indicate that normal human blood serum is not actively germicidal for the staphylococcus pyogenes aureus or the streptococcus pyogenes. 3. It does not lose its germicidal power for typhoid and colon bacilli, even in the late stages of chronic wasting disease. 4. In fatal disease it occasionally loses part of its germicidal power for the colon bacillus, shortly before death, though it more frequently retains its germicidal power for this bacillus until several hours after death. 5. A weakening of the germicidal power of the blood serum shortly before death favors an agonal invasion of the body by the colon bacillus.

Inefficiency in Military Sanitation Abroad.—On the principle that misery loves company, or better perhaps because of the satisfaction it gives to find that we are not the only country in the world suffering from war department deficiencies, it is somewhat refreshing to read criticisms in the English papers on the medical management of the British army in Egypt and elsewhere. Thus we learn that through some war office inefficiency the provisions for treating the sick invalided from the front at Alexandria were totally inadequate, and that the medical arrangements made for the British Salisbury Plain maneuvers were "medieval in type." The *Lancet* explains that, while these are facts, the blame must not be attached to the army medical department, but to the higher officials, by whom it is hampered. We change our skies, but the customs, good and bad, are found the same. The chief difference between Great Britain and ourselves is, perhaps, that there are not the political and other inducements over there to stir up a hysteric public sentiment in regard to real or imaginary wrongs.

Cause of Death in the Epileptic Status.—In the course of an anatomic study of fatal cases of epileptic status during a period of four years, Weber (*Wiener Med. Woch.*, 1899, No. 4, p. 168) found that in most instances in which death followed severe epileptic attacks there existed in the central cortex and medulla oblongata a recent vascular disease and extravasations, with partial destruction of adjacent nervous elements. These changes when present in the medulla oblongata, are in many cases the direct cause of death; in other cases they cause, in accordance with their situation as related to the nervous elements, circulatory disturbances and hemorrhages in the large organs of the body, injury to the respiratory apparatus, transitory paresis of the extremities and psychic disturbances. Weber points out that similar changes are not rarely observed in cases of acute poisoning and of severe infectious diseases, and he expresses concurrence in the view that the acute manifestations of some forms of epilepsy are attributable to the activity of a chemic poison, at times generated within the body and inflicting injury upon the central nervous system, with changes in the vessels, irritation, hyperemia, inflammatory exudation and infiltration of their walls and the surrounding nervous tissue, and finally hemorrhagic extravasation. The vasomotor center is affected partly by reflex influence and partly by direct injury of its ganglion cells.

Arteriosclerosis.—Concerning the prophylaxis and treatment, Whittaker (*Penn. Med. Jour.*, February, 1899) says: The prophylaxis depends upon the ability to adjust the work to the changes which have already taken place, and to live a life of perfect hygiene. The man of 50 years must learn that he cannot do the work of a man of 30, that is, as Emerson says, he must "take in sail." Syphilis need not be contracted. Abstention from alcohol is a *sine qua non*. In avoiding worry the patient may learn to content himself with less wants, remembering the statement of Socrates that he who has the least wants is nearest to the gods. In all things temperance, and this remark applies especially to diet. Arteriosclerotic changes are less frequent in the herbivora. The individual should, therefore, take less animal food, and indeed less food of all kinds. He should especially distrust the heavy evening meal. The best food is milk. An exclusive milk diet, from two to four quarts per day, will put a stop to the changes of arteriosclerosis in the kidney. The strain of hard work must be lessened. On the other hand, the individual should not lead a too sedentary life for fear of increasing abdominal plethora. Coffee produces abdominal plethora. The quantity of it should be lessened at least. The weight of the whole body must be kept down.

Control of Experimental Inoculation.—Apropos to the agitation by the zoöphilists for the control and restriction of physiologic experimental research in the District of Columbia, the following item, taken from the editorial page of the Chicago *Tribune*, February 28, is of interest: "During a mad dog scare on Long Island, a young girl was bitten by a dog supposed to be suffering from rabies. The dog died. The girl has worried herself into a nervous wreck. Dr. Cabot, the bacteriologist of the health department, asked the Society for the Prevention of Cruelty to Animals to give him a part of the dead dog's spinal cord so that he might make an inoculation test and possibly save the girl's reason. The society ascertained that the doctor intended to inoculate a guinea-pig and refused his request on the ground that it would be cruelty to animals. It may be that the dog did not have the rabies, but the society stands by the guinea-pig. Such extremes are liable to bring a worthy cause into disrepute." In this connection, we may also note the fact that in a Senate document, relating to the act now before Congress, a vicious attack was made on Dr. Sternberg, the surgeon-general of the army, on account of certain published researches a number of years ago, and this has called out a vigorous reply on his part, in which he shows the actual important, practical results of these same experiments. There is need of a Dickens or a Hawthorne to show up in a vivid, popular way in fiction the tendencies of these self-centered zoöphilists—they can not be called philanthropists—who value human life or reason at less than the risk of possible infection of a guinea-pig.

Urinary Tuberculosis.—Fenwick (*British Med. Jour.*, February 18), in enumerating the urinary diseases which can be suspected or recognized by rectal examination, says of urinary tuberculosis: "No surgical disease of the urinary tract will so mislead you by its vagaries, or so baffle you in your well-meant efforts to relieve its active phases, or so fiercely resent your instrumental interference, as urinary tuberculosis. The reasons for all this obscurity rest in the insidiousness of the onset of the disease, in its marked susceptibility to septicity, and in the power which it possesses of imitating every other disease of the urinary tract. With the exception of the enlarged prostate of old age, I know of no disease of the urinary tract, from urethritis to renal carcinoma, which this arch mimic does not simulate, and that very closely. But a clue can be obtained by rectal and testicular examination in a large percentage of the cases in the very earliest onset of the symptoms. In 157 male patients with urinary tuberculosis, who have been under my care, a typic deposit was found on their first visit in the epididymis in 33 cases (21 per cent.); in the epididymis and prostate coincidently in 38 cases (24 per cent.); in the prostate and seminal vesicles in 5 cases (3 per cent.); in the prostate alone in 6 cases (3 per cent.); in the prostate and bladder (the latter cystoscopically) in 10 cases (6 per cent.). If we add these together, it will be seen that a deposit could be detected by the finger in 58 per cent. of the cases on their first visit. During the course of the disease the chance of its detection by the finger is still further increased, for 80 per cent. finally present tangible evidence of tubercle in the lower genito-urinary

organs, and in only very few instances does the patient pass through all the stages of the disease and die, without the epididymis or the prostate becoming affected. A careful examination of these organs is obviously, therefore, of the utmost importance."

Committee Report on House Bill for Medical Expenses.—The House Committee on military affairs has made a favorable report on House bill 11175, relating to reimbursements for medical expenses of those who served in the army and navy. The report says: The purpose of this measure is so self-evident and just that the bare mention of the proposition would seem to be all that is necessary to justify favorable consideration of the same. The facts are that many officers, non-commissioned officers and enlisted men who served in the army and navy during the recent war with Spain, upon sufficiently recovering from their illness to endure the journey, were sent to their homes on leave or furlough by proper authority, in order that their restoration to health might be more rapid and complete than if they remained in the field or in army hospitals. In many instances they required medical care and attention while they were at home on leave or furlough, and were obliged to become inmates of private hospitals. During this time they were no expense to the Government and the indebtedness incurred by them for physicians' service and medicines, nursing and hospital bills amounted, in many cases, to more than their pay as officers, soldiers or seamen. As the bill restricts its application to those whose sickness or disabilities were incurred by them through their military or naval service in the war, it seems very proper that they should be reimbursed for such expenses, but under existing law there is no authority for doing so. The bill was submitted to the Surgeon-General of the army, who under date of Jan. 25, 1869, earnestly recommended its passage, stating also that there were then on file in his office many claims for the sick and wounded soldiers while on furlough, which he considered just and proper, but which could not be paid under existing laws and regulations. The Secretary of War, under date of Jan. 26, 1899, respectfully returned the bill to the chairman of the Committee on Military Affairs of the House, inviting attention to the report of the Surgeon-General and concurring in the views therein expressed. As the passage of the bill is recommended by the Surgeon-General, who is most familiar with the circumstances relating to the cases which will be affected by the measure, and his recommendations are concurred in by the Secretary of War, and as the proposition seems just and righteous in itself, your committee recommend that the bill do pass.

Operative Treatment of Pelvic Suppuration.—Le Dentu (*Bull. et Mem. de la Soc. de Chir.*, No. 26), in a discussion on treatment of pelvic suppurations in the female, expressed at some length his views on the indications and contraindications of incision of vaginal culs-de-sac. Such treatment, he states in a concluding summary, is indicated in: 1, a case of suppurative hematocele in which there is a single sac; 2, a case of suppurative hematocele made up of numerous deposits included within septa, provided in cases there be a probability of a solid boundary of adhesions between the tumor and the peritoneal cavity; 3, a case of unilateral salpingitis or suppurating ovaritis, on condition that the sac be adherent to the mucous membrane of the vagina, or at least that it be not much raised above the cul-de-sac; 4, a case of double suppurating salpingitis, provided that the two sacs have run together so as to form a single sac and do not project to any great extent into the pelvic cavity. In such cases as these, however, a long history of pelvic mischief and a chronic cause of the disease would indicate some other treatment. Single incision of either the anterior or the posterior vaginal cul-de-sac is decidedly contraindicated in cases: 1, of multilocular suppurating hematocele when the superior limits of the disease are ill-defined, and when there is reason to fear the rupture of adhesions and penetration into the peritoneal cavity during the operation; 2, when there are grounds for suspecting the existence of a salpingitis or ovaritis, either single or double, which is complicated with encysted peritonitis; 3, when the swelling, even though small, is situated far above either cul-de-sac; 4, when the omentum just above the disease is thickened and indurated, and forms a considerable portion of the swelling. In cases in which incision of either cul-de-sac or of both is contraindicated, the surgeon should have resource either to vaginal hysterectomy or to laparotomy.—*British Medical Journal.*

Cincinnati.

MEASLES.—Measles is again epidemic in Cincinnati. The disease began in mild form about the first of the year, but has spread rapidly and at the same time seems to have gathered malignancy, so that now every part of the city is involved and numerous deaths have been reported. According to the records of the health department, 756 cases of measles were reported in 1898; during the first two months of this year 741 cases have been reported—a most significant fact that speaks for itself. So far this month an average of from fifteen to twenty-five cases are being reported daily. Ten deaths have occurred, while during the whole of last year but twelve deaths were reported from measles.

SMALLPOX.—The health department reports the following: Since December, when smallpox first appeared in Cincinnati, there have been in all 240 cases, all of which have been sent to the Branch Hospital. Of these, 215 belong to the negro race, and but 26 are whites. There are now under treatment at the Branch, 122 cases; 117 have been discharged as cured. There have been four deaths, showing the mildness of the epidemic. General vaccination has been performed throughout the city. In the public, private and parochial schools, the regulation requiring vaccination has been enforced, or the pupils have not been allowed to attend. Letter-carriers, inmates of the workhouse and all public institutions have been vaccinated. Special attention has been paid to the Ohio River traffic, and no one has been allowed to go or come off a boat without being vaccinated. With these precautions the situation has vastly improved of late.

Detroit.

HEALTH PLACARDS.—As a result of the recent discussion among the members of the medical profession, and the action taken by the different medical societies of the city, the health board has had placards put up at down-town street-corners asking pedestrians to refrain from spitting on the sidewalks; placards have also been put up in every street-car in the city, prohibiting passengers from spitting on the floor of the car.

BILL FOR REPORTING A BIRTH.—Dr. G. Gordon recently surprised the health board by presenting a bill for one dollar, for reporting a birth. The bill was something of the nature of an experiment to determine whether the board could be compelled to pay physicians for reporting cases of childbirth, and incidentally to discover whether the reporting of such cases is compulsory. Dr. Gordon says he has looked up the law on the question and finds that there is no State enactment compelling such reports, there being only a city ordinance. The question was thoroughly discussed at the last regular meeting of the Wayne County Medical Society. Many of those present took the same view of the subject as Dr. Gordon, but no definite action was taken by the society, although there were a number present who determined to refuse to report cases of birth in the future unless they received some compensation for the work.

HEALTH REPORT.—For the week ending March 4: Deaths 102, under 5 years 39; births, male 50, female 37; contagious diseases, diphtheria, 7 cases at last report, 4 new cases, 3 recoveries, 1 dead and 7 sick; scarlet fever 29 cases last month, 8 new cases, 5 recoveries, 1 dead and 31 now sick.

Washington.

HEALTH OF THE DISTRICT.—The report of the health officer for the week ended February 25 shows the total number of deaths to have been 111, of which 69 were white and 42 colored. There were 6 fatal cases of diphtheria, 2 of measles, 6 of la grippe and 1 of typhoid fever. At the close of the week there were 61 cases of diphtheria, 87 of scarlet fever and 24 cases of smallpox under treatment. There has been no death from smallpox since the present outbreak and all the patients are suffering from mild form. Of the 31 patients taken to the hospital, but 1 of them, a woman aged 50 years, had been successfully vaccinated previous to the development of the disease. She claims to have been vaccinated in early childhood. The police are on the lookout for the men who recently escaped from the smallpox quarantine and. when found, they will be dealt with severely, according to the law. The judge of the police court has entered a vigorous protest against bringing any of these cases before him for trial, until every assurance can be given that smallpox will not be thereby communicated to the honorable judge of the court. The health officer has mailed to all physicians of the District, copies of the law governing the report and isolation of smallpox, together with Vol. xiv, No. 1, of the Public Health Report of the Marine-Hospital Service of January 6. The report, as a public document, can be sent, on application to the Marine-Hospital Service, to any physician in the United States. The report is a very valuable one, going into the definition, etiology, symptoms, regular and irregular eruptions, complications, diagnosis, including differentiation from all other eruptions, isolation, disinfection, and house-to-house inspection, and closes with a monograph on vaccination.

INCONSISTENT ANTIVIVISECTIONISTS.—During the recent blizzard, the Humane Society secured the arrest and fine of several poor, but hard-working drivers, who failed to throw blankets over their horses, but entirely overlooked the fact that a lieutenant of police refused admission to two hundred poorly fed and clothed men who desired to warm themselves in the basement of the municipal building. The men had congregated in the early morning to secure work at snow cleaning under the District government, but were driven out in the cold, where they suffered for several hours. The Humane Society might, with profit, take poor men under their protecting wing.

DISTRICT APPROPRIATIONS.—The Conference Committee has agreed to the following items in the District appropriation bill: $150,000 for intercepting sewer; $145,000 for sprinkling and cleaning streets; $1000 for the removal of snow; $5000 for public pumps; $5000 for investigation of the feasibility of filtering the water-supply; $1000 for an additional clerk in the health office; $3000 for a disinfecting service; $2000 for the transportation of paupers, and $3000 for isolation wards at Garfield and Providence Hospitals.

DR. JOHN B. HAMILTON BURIED AT ARLINGTON.—The remains of Dr. John B. Hamilton, late editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, formerly Asst.-Surgeon U. S. A., and late Surgeon-General of the Marine-Hospital Service, were brought from Elgin, Ill., where he died, and interred in the Arlington National Cemetery on February 25. The remains were accompanied by a military escort, who, by special order of General Miles, fired a salute over the grave and sounded taps. The funeral was attended by his widow, mother, son and brother, the Secretary of the Treasury, Stephen B. White, Representatives Joseph Cannon, Hepburn, Henderson, and Senator Mason.

Philadelphia.

TYPHOID FEVER CASES.—During the week just passed, 443 cases of typhoid fever have been reported to the board of health, with 49 deaths. Only one ward in the city remains free from the scourge, the Eighteenth. The Thirty-third is the banner ward for the week, with 39 cases.

DR. CHARLES A. OLIVER has presented to the University of Pennsylvania library several new volumes relating to the eye.

DR. EDWIN VAN GAZZAM, a graduate of the university, has been elected secretary of the New York Sons of the American Revolution.

FACULTY CLUB.—The regular monthly meeting of the University Faculty Club was held March 4. Sixty guests were invited, including a number of prominent men from near-by universities.

BEQUESTS.—Through the will of Hannah Price Brookfield, who died in this city on February 8, a bequest of $10,000 has been made to the Jefferson Medical College to establish free beds in that institution in memory of Dr. J. M. Brookfield and his wife . . The will of Dr. Robert P. Harris, who died in this city a short time since, provides that his medical books be given to the College of Physicians and Surgeons of Philadelphia.

RUSH HOSPITAL FOR CONSUMPTIVES.—This hospital announces through its treasurer, Nathaniel E. Janney, that owing to the new addition the institution is in need of funds to carry on the work now being done there for those suffering with tuberculosis. The hospital has been of great benefit, especially to those who are in the early stages of the disease.

MEDICO-CHIRURGICAL COLLEGE.—The petition of the Medico-Chirurgical College, which was made before the court of common pleas several months ago, asking that its charter be amended so as to provide for the granting of diplomas and degrees in dental surgery and pharmacy, has been passed upon by the supreme court of Pennsylvania, which gives the permission asked for. The petition was being strongly contested by the Philadelphia Dental College on the ground of lack of authority.

PROBABLE CEREBROSPINAL MENINGITIS.—According to report seven cases of supposed cerebrospinal fever have developed in a section of the city called Frankford. During the recent cold spell a policeman became affected with the disease and after a few days' illness he died. Shortly afterward his son, 13 years of age, also became afflicted with the same disease, and it was thought that the latter case became infected from carrying the bed out of the room in which his father had died. While some have doubted the genuineness of the epidemic form of the disease, all necessary precautions have been taken by the board of health.

ANTIVACCINATION.—A bill has been introduced in the State legislature concerning vaccination in Pennsylvania. To arouse the people in this matter, the College of Physicians of this city has taken the initial step, and at a meeting recently held, addresses were made by Drs. James Tyson, Taylor and John K. Mitchell. Dr. Mitchell drew up the following resolution, which was unanimously adopted:

Resolved, That the College of Physicians of Philadelphia hereby record their earnest conviction that any action by the legislature which should in any way interfere with or lessen the stringency of the present law requiring vaccination as a preliminary requisite to school attendance is unwise, dangerous and a step backward in sanitary matters, and will expose the community to great and yearly increasing danger of an epidemic of smallpox and to consequent incalculable injury of health and immense loss to the commerce of any community in which an epidemic may occur.

The executive committee of the Public Education Association has also adopted a similar resolution in regard to the proposed repeal of the vaccination law. It is stated that the instigation of this movement is through an "antivaccination league," the headquarters of which is being kept secret. Hon. A. L. Allen has introduced the measure in the State legislature.

REPORT OF HOSPITAL.—The report of the Hospital of the Protestant Episcopal Church for the year just closed shows that during the summer and fall the hospital received 151 soldiers, of which number, 144 were discharged cured and 3 died. The board appeals for funds for the establishment of

a clinical laboratory as well as for funds to complete the nurses' home. During the year 2764 patients have been admitted, which, with 271 remaining in the hospital at the time of the last report, makes a total for the year of 3035. Of this number, 2746 have been discharged, 1977 cured, 415 improved and 83 unimproved, while 271 have died. In the dispensaries 37,820 new patients have been treated. Of this number, 20,793 were medical, 12,579 surgical, 2727 eye cases and 1721 in the nose and throat department. The daily average of dispensary patients has been 367, of patients in hospital 287.

HOW SHOULD STUDENTS BE GOVERNED?—In one of the dental colleges, a professor who had been lecturing there for the past twenty-eight years, recently became offended at what has been called a misunderstood disturbance previous to the time of his entrance, before the students gathered to hear the lecture. The professor had been angered because a week previous a class fight had been indulged in by members of the senior and junior classes. At any rate, the professor offended the students by denouncing them in vigorous language, and it is reported stated that if they did not apologize to the faculty he would not lecture to them. This it seems the students refused to do, and at a meeting held they decided to attend no more of the lectures conducted by the professor. The latest account states that the professor has resigned and his successor has been chosen.

BOARD OF HEALTH.—The senate, on March 2, passed the bill providing that the powers and duties now by law vested in the Board of Health of Philadelphia shall be performed by a bureau of health, which bureau shall be organized and controlled by the mayor. The companion measure, abolishing the board of health, also went through on final passage. There was no opposition to either bill. From the fact that the bill which has been substituted for the one now in force provides that a single officer, to be appointed by the mayor, will be responsible to the Department of Public Safety instead of being composed of a board of five members as now constituted, and from the fact that a single person may hereafter look after the regulations governing health matters it may be a question whether the people will be any better off in the long run. It may also be pointed out that abolishing a body composed of five persons and substituting one who shall do the mayor's bidding may be rather detrimental, from the fact that the best interests of the people may be sacrificed for political ambition. Whether this new departure will prove beneficial remains to be seen.

THE PUBLIC SERVICE.

Board Convened.—A board of officers will be convened at San Francisco, Cal., Tuesday, May 2, 1899, for the purpose of examining candidates for admission to the grade of assistant-surgeon in the U.S. Marine-Hospital Service.

Detail for the Board: Surgeon J. M. Gassaway, chairman; Surgeon S. D. Brooks; P. A. Surgeon C. H. Gardner, recorder.

Applications for this examination must be received on or before April 22.

Candidates must be between 21 and 30 years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: 1, Physical. 2, Written 3, Oral. 4, Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment, the young officers are as a rule first assigned to duty at one of the large marine-hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service assistant-surgeons are entitled to examinations for promotions to the grade of passed assistant-surgeon.

Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant-surgeons receive $1600, passed assistant-surgeons $2000, and surgeons $2500 per year. When quarters are not provided, commutation at the rate of $30, $40 or $50 a month, according to grade, is allowed.

All grades above that of assistant-surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service, up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information or for invitation to appear before the board of examiners, address Supervising Surgeon-General, U.S. Marine-Hospital Service, Washington, D. C.

Movements of Navy Medical Officers.—Changes in the medical corps of the U.S. Navy for the week ending March 4, 1899.

P. A Surgeon W. F. Arnold, when discharged from further treatment at hospital, Norfolk, Va., ordered home and granted sick leave for three months.

P. A. Surgeon E. M. Shipp, detached from the "Lancaster" and ordered to the naval hospital, Norfolk, Va.

P. A. Surgeon J. A. Guthrie, detached from the naval hospital, Norfolk, Va., and ordered to the "Franklin" immediately.

Asst.-Surgeon G. L. Augeny, detached from the naval hospital, Chelsea, Mass., and ordered to the "Lancaster."

Asst.-Surgeon J. H. Payne, Jr., detached from the "Franklin" and ordered to the naval hospital, Chelsea, Mass.

Surgeon John W. Ross, U.S.N., retired, is assigned to military hospital No. 1, Havana, Cuba, and will report to the commanding officer of that hospital for duty.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U.S. Marine-Hospital Service, for the seven days ended March 2, 1899.

Surgeon J. H. White, to proceed to Elizabeth, N. J., for special temporary duty. To report at Washington, D. C., for special temporary duty.

Surgeon P. M. Carrington, to proceed to Baltimore, Md., as inspector of unserviceable property.

P. A. Surgeon W. J. Pettus, to proceed to Cape Charles City, for special temporary duty, Feb. 25, 1899. To proceed to Burlington, N. C., for special temporary duty, Feb. 28, 1899.

P. A. Surgeon J. O. Cobb, to report at Washington, D. C., for special temporary duty.

P. A. Surgeon G. M. Guiteras, to proceed to Matanzas, Cuba, for duty as quarantine officer.

Asst.-Surgeon W. R. McAdam, to proceed to Key West, Fla., and assume temporary charge of Service.

Hospital Steward F. L. Brown, to proceed to Norfolk, Va., and report to commanding officer for duty.

Hospital Steward B. E. Holsendorf, granted leave of absence for two days. Upon being relieved by Hospital Steward F. L. Brown, to proceed to San Juan, Porto Rico, and report to Surgeon A. H. Glennan for duty.

CHANGE OF ADDRESS.

Baer, A. W., Clark and Adams Sts. to Security Bldg., Chicago.
Dawes, T. J., Livermore to Fonda, Iowa.
Hudson, J. R., Macon, Ga., to Pinar del Rio, Cuba.
Healey, S. R., Hanover, N. H., to Newburyport, Mass.
Johnson, G. W., Dunning to 733 Grace St., Chicago.
Little, M. J., Independence, Mo., to Madison, Neb.
Straw, E. E., Rural Retreat, Va., to Vinita, I. T.
Stookey, W. M., St. Louis, Mo., to Grawsville, Utah.
Schmall, O. B., 1430 John to 109 14th St., Cincinnati, Ohio.
Weber, B. A., 641 26th to 927 2d St., Milwaukee, Wis.

LETTERS RECEIVED.

Atkinson, W. B., Philadelphia, Pa.; Alden, C. H., Washington, D. C.; American Therapeutic Co., New York City; Artis, H. G., Owensboro, Ky.; Ammerman, U. S., Reynolds, Neb.; Anderson, R. A., Albany, Ga.

Babcock, L. C., Philadelphia, Pa.; Brothers, S., New York City, (2); Brown, Mark A., Cincinnati, Ohio; Barbour, L. P., Boulder, Colo.; Boogher, J. L., St. Louis, Mo.; Baker, C. W., Trempeleau, Wis.; Bromine-Iodine Chemical Co., Binghamton, N. Y.; Barnhill, J. U., Columbus, Ohio.

Caldwell, J. J., Baltimore, Md.; Coffman, J. J., Scotland, Pa.; Corlett, W. T., Cleveland, Ohio; Clements, J., Kansas City, Mo.; Clements, G. E., Chicago.

Dewey, C. R., Coloma, Mich.; Dempsey, J. G., New Orleans, La.; Driver, W. E., Norfolk, Va.; Dower, T. J., Fonda, Iowa.

Eshner, A. A., Philadelphia, Pa.; Elliott, A. R., New York City.

Fox, L. Webster, Philadelphia, Pa.; Floyd, D. S., Joyce, Ky.

Gessner, H. B., New Orleans, La.; George, W. W., New York City; Giles, A. E., London, England; Gihon, A. L., New York City.

Hare, H. A., Philadelphia, Pa.; Harrington, T. F., Lowell, Mass.; Hektoen, L., Chicago; Hogue, G. I., Chicago; Hutchinson, Woods, London, England; Hoffa, J. P., Washingtonville, Pa.; Herzog, M., Chicago.

Irwin, J. L., Detroit, Mich.

Jenkins, N. B., Knoxville, Tenn.; Jicinsky, J. Rudis, Cedar Rapids, Iowa; James, N. G., Hayneville, Ala.; Johnson, H. L. E., Washington, D. C.; Johnson, G. W., Chicago; Juler, Cundell, Cincinnati, Ohio.

Katerbau, P., Hoboken, N. J.; Kiernan, J. G., Chicago; Kelly, J. S., Syracuse, N. Y.

Lautenbach, L. J., Philadelphia, Pa.; L'Administration Genéral, Paris, France; Leuty, Amos, Larchwood, Iowa.

Mayer, Emil, New York City, (2); Medical Advertising Bureau, New York City; Merrick, M. B., Passaic, N. J., (2); McIntire, C., Easton, Pa.; Montgomery, E. E., Philadelphia, Pa.; Miller, E. J., Detroit, Mich.; Miller, A. C., Findlay, Ohio; Mayo, H. M., De Lamar, Nev.; Mueller, V. F., Milwaukee, Wis.; Moore, J. E., Minneapolis, Minn.; Mogk, W. A., Ann Arbor, Mich.; Makuen, G. H., Philadelphia, Pa.; Monell, S. H., Brooklyn, N. Y.; Matas, R., New Orleans, La.

Newman, H. P., Chicago; Nichols, J. O., Warne, N. C.

Porter, Wm., St. Louis, Mo.; Powers, C. A., Denver, Colo.; Packard, F. R., Philadelphia, Pa., (2); Picard, Alphonse et Fils, Paris, France; Priestley, J. T., Des Moines, Iowa; Patton, J. M., Chicago.

Ridlon, John, Chicago; Rosenthal, Edwin, Philadelphia, Pa., (2).

Senn, N., Chicago; Spivak, C. D., Denver, Colo.; Savage, G. C., Nashville, Tenn.; Sweat, J. A., Great Falls, Mont.; Shrady, J., New York City; Saunders, W. B., Philadelphia, Pa.; Schirman, A., St. Petersburg, Russia; Smart, W. N., Muskegon, Mich.; Smith, J. W., Bloomington, Ill.

Trawick, J. D., Nashville, Tenn.; Thoms, Sharon J., Bushrah, Arabia.

Washburn, W. H. Milwaukee, Wis.; Wessinger, J. A., Ann Arbor, Mich.; Wiggin, F. H., New York City; Woldert, E. A., Philadelphia, Pa., (3); Woods, M., Philadelphia, Pa.; Woodruff, E. W., Columbus, Ohio; Wollman, H., Kansas City, Mo., (2); Woodbury, F., Philadelphia, Pa.; Whitford, Wm., Chicago.

Yates, J. A., Weser, Texas.